



Win the Fight - Strengthen the Team - Prepare for the Future

Restoration Advisory Board (RAB)

1 Nov 18

Colonel John R. Edwards
Commander, 28th Bomb Wing

Prepare for the Future

***Purpose:** Update Public on Status of Ellsworth's
Environmental Restoration Program*



Introduction



➤ Participants

- SD Dept of Environment and Natural Resources
 - Joane Lineburg, Restoration Program Manager (RPM)
 - Erin Dries, Drinking Water Program
- US Environmental Protection Agency
 - Pat Smith, RPM
 - Patrick Davis, Administrative Coordinator
 - Bob Benson, Toxicologist
 - Katherine Jenkins, Community Involvement
- Air Force Civil Engineer Center
 - Melody Jensen, Ellsworth RPM
 - William Barry, Branch Manager
 - Dr. Brian Howard, PFOS/PFOA Team
 - Ron Lester, Regulatory Liaison



Agenda



- RAB Background
- **Non-PFOS-PFOA** Topics (*Legacy Restoration Issues*)
 - 5-Year Review
 - Operable Unit 11 (Basewide Groundwater-Mostly Trichloroethylene [TCE])
 - Status of Former Compliance Restoration Program Sites
 - Upcoming Work
 - Military Munitions Response Program (MMRP) Site MB962 Remedial Investigation
- **PFOS and PFOA**
- Future Restoration Actions



RAB Purpose



- RAB is a stakeholder group that meets regularly to discuss environmental restoration
- Provides community with an opportunity to become involved in the environmental restoration process at Ellsworth AFB
- Offers members an opportunity to influence clean-up decisions through discussion and provides input to decision makers



Examples of RAB Activities



- Reviewing/commenting on restoration documents
- Providing information to the community
- Receiving input from the community
- Reviewing schedule, type and status of restoration activities



RAB Way Forward



- Ellsworth RAB very active in 1990s and met quarterly
 - As remedial actions were completed, interest decreased
 - Board members stopped participating
 - Meeting frequency decreased to once yearly
 - Attendance decreased
- Is it time to formalize the RAB again?
- Who can be on the board
 - RAB should be diverse: AF, SD, EPA, Civic & Community
 - Ellsworth will solicit community members for participation
 - If interested, please fill out RAB Membership Request Form



5-Year Review



- 2015, 5-Year Review available online
 - <http://afcec.publicadmin-record.us.af.mil>
 - Operable Units are protective
 - Basewide protectiveness statement deferred until investigations are completed for:
 - 1,4-Dioxane
 - Vapor intrusion
 - Military Munitions Response Program (MMRP)
 - PFOS-PFOA
- 2020, 5-Year Review
 - Fifth 5-Year Review to be completed at Ellsworth
 - Must be finalized September 2020

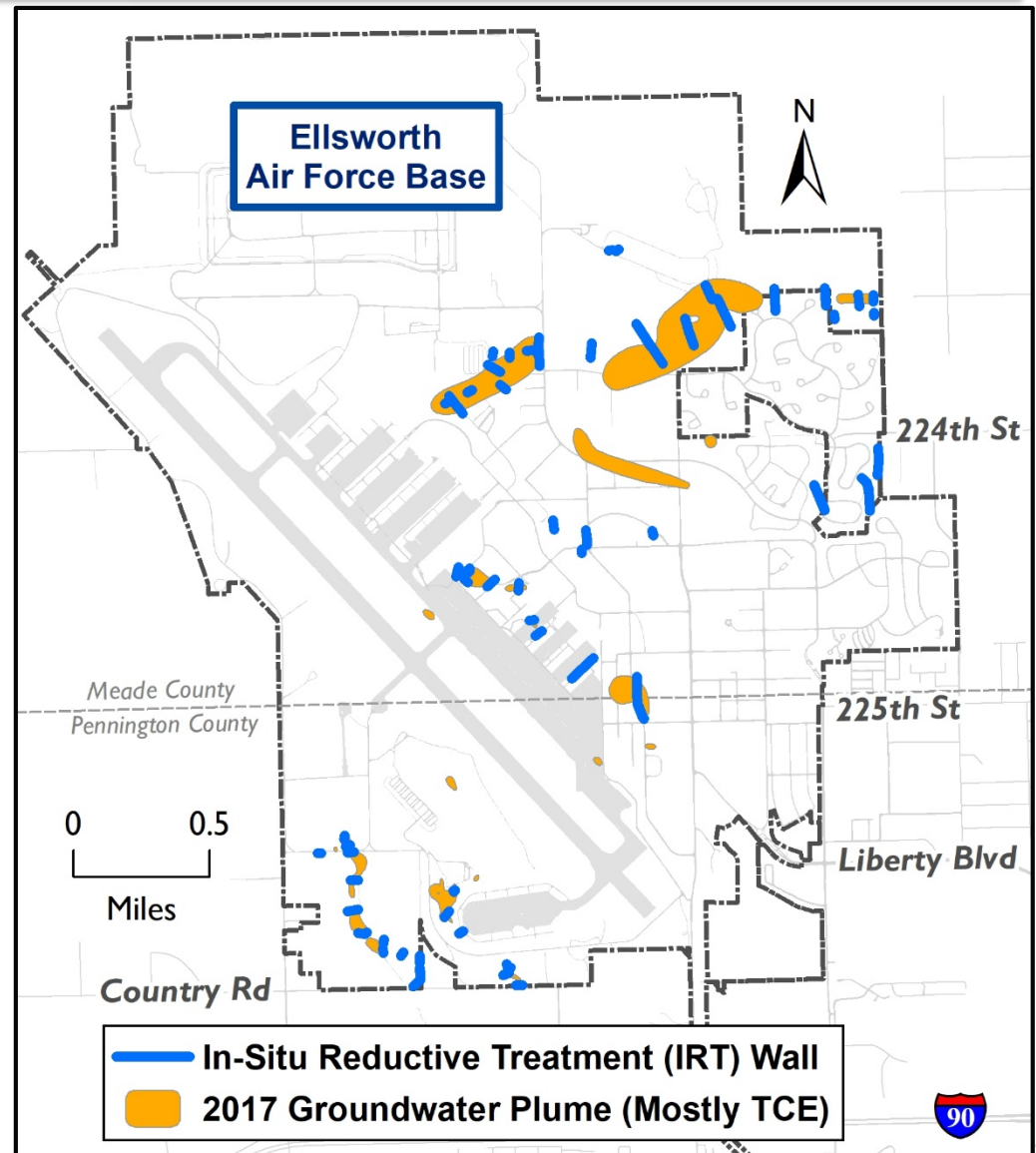


Basewide Groundwater (Mostly TCE)



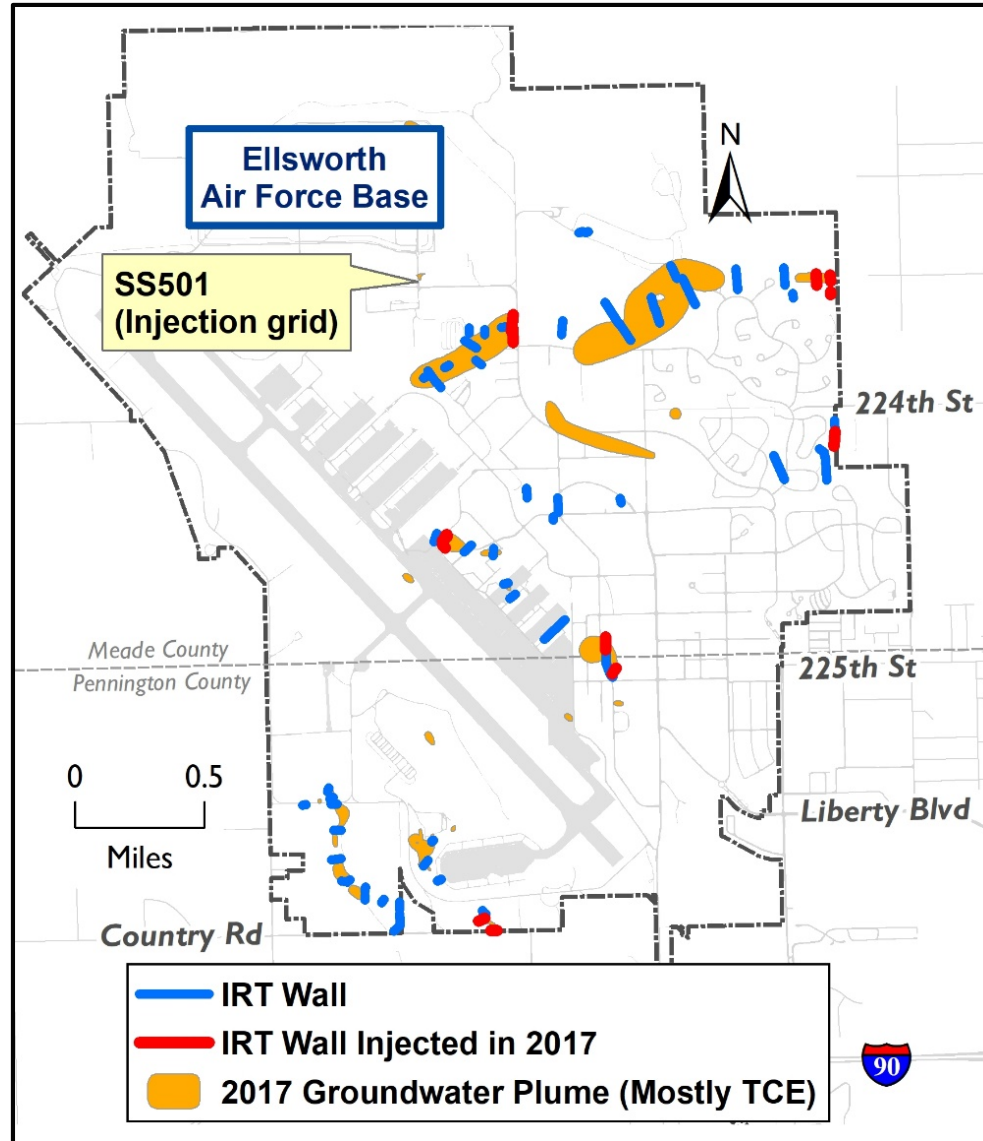
- Record of Decision (ROD) Amendment signed in February 2012, allowed shut down of pump and treat systems
- Current remedy is in-situ reductive treatment (IRT) and monitored natural attenuation (MNA)
 - IRT zones reinjected as needed
 - Pump and treat systems maintained as a backup

Not related to PFOS/PFOA





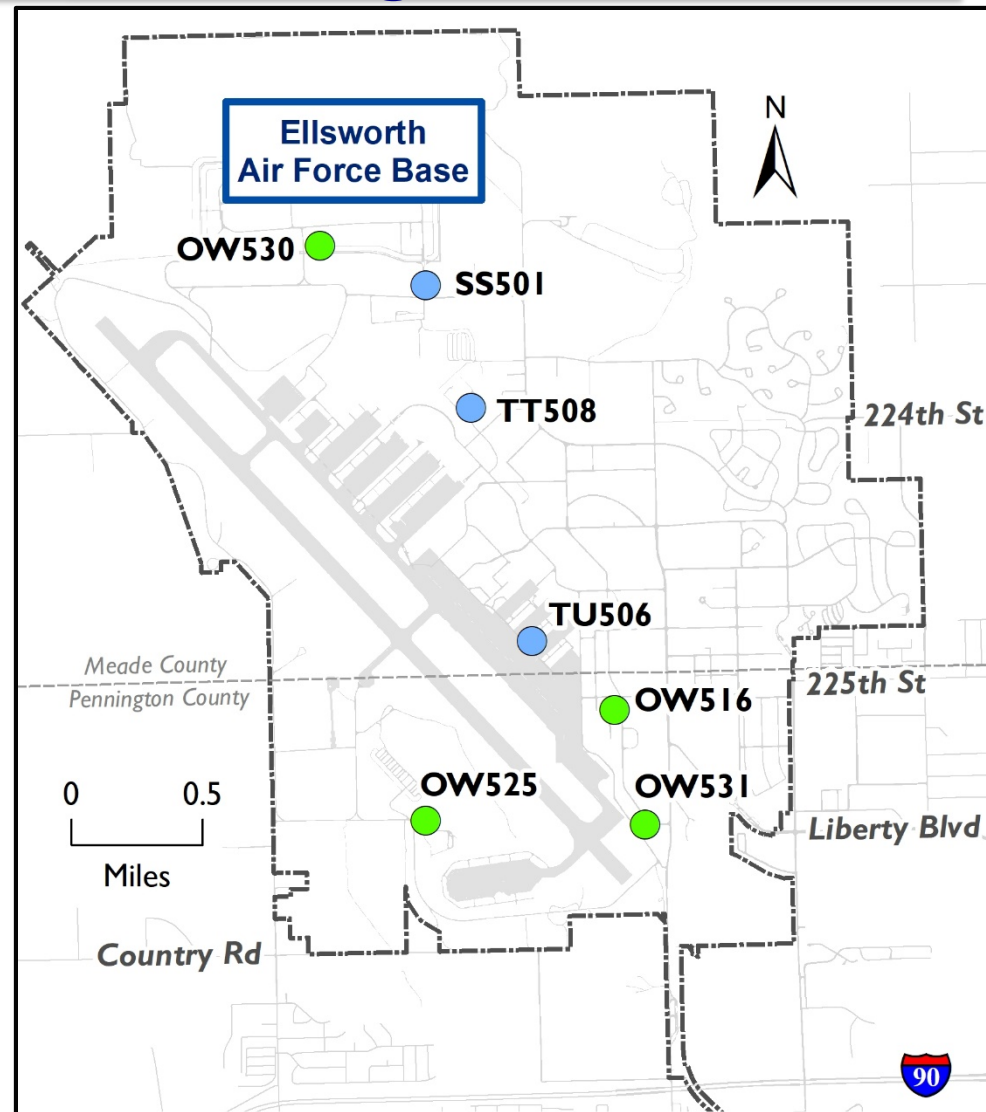
Basewide Groundwater (TCE) Re-Injected IRT Sites





Status of Former Compliance Restoration Program Sites

- Injections completed in 2018
 - TU506 (UST Site 7618)
 - TT508 (Fuels Area D)
- Remedy in Place (RIP) ●
- Sites closed since last RAB ●





Upcoming Work



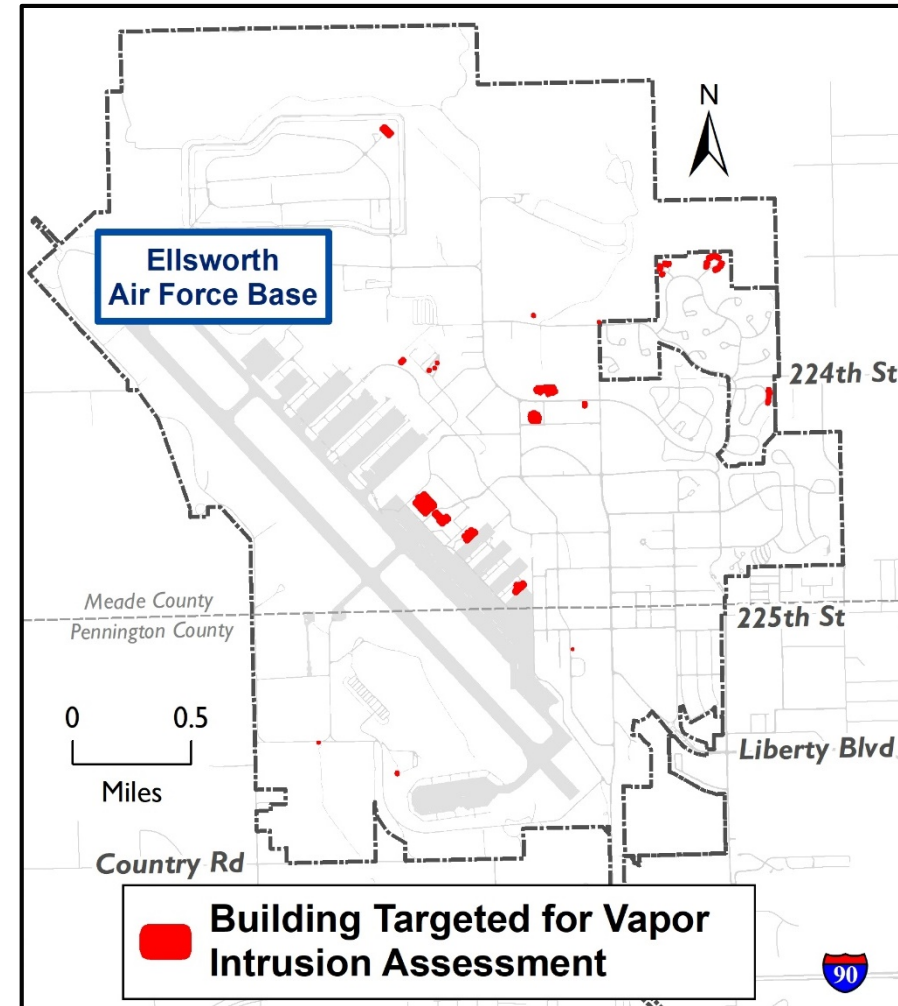
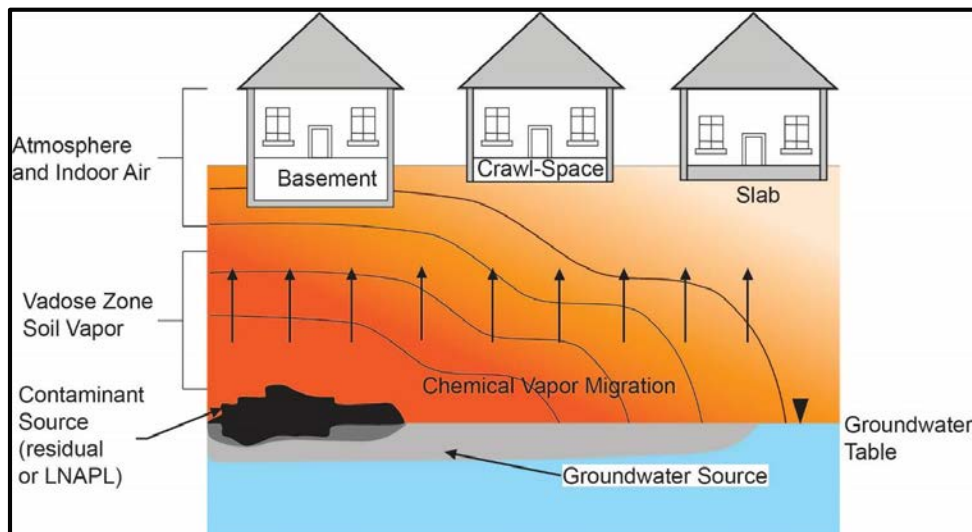
- Work Plans Under Preparation
 - RAWP – Addendum 10 IRT Injection
 - Vapor Intrusion Site Investigation
 - 1,4-Dioxane Site Investigation
- Field Work
 - RW028 Low Level Radioactive Waste Burial Site Removal and Investigation



Vapor Intrusion



- Vapor intrusion – volatile chemicals migrating into buildings
- Indoor air sampling scheduled for January 2019
- Buildings selected based on proximity to groundwater plumes

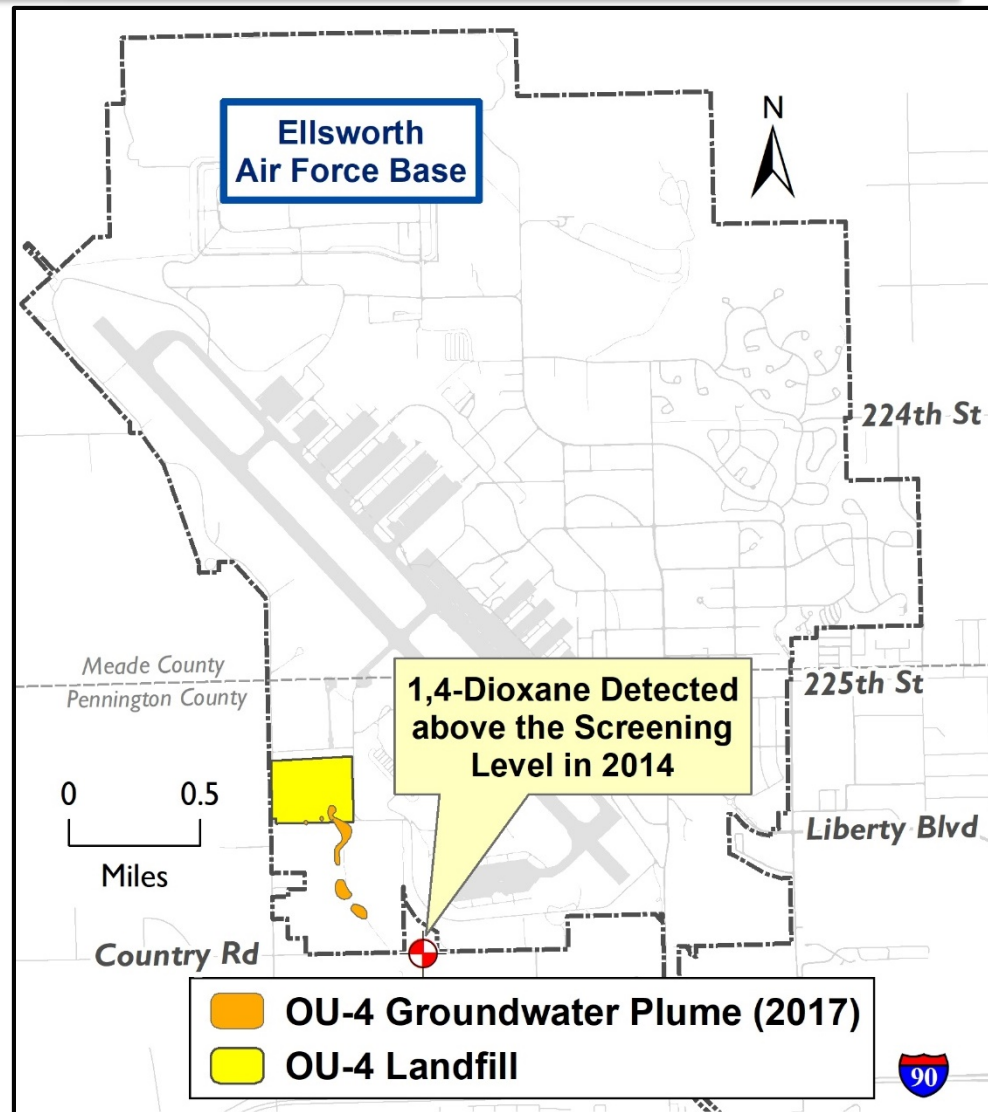




1,4-Dioxane



- 1,4-dioxane is a solvent stabilizer
- In 2014, it was detected in groundwater above the screening level
- Sampling will be completed at OU-4 and off-base to the south



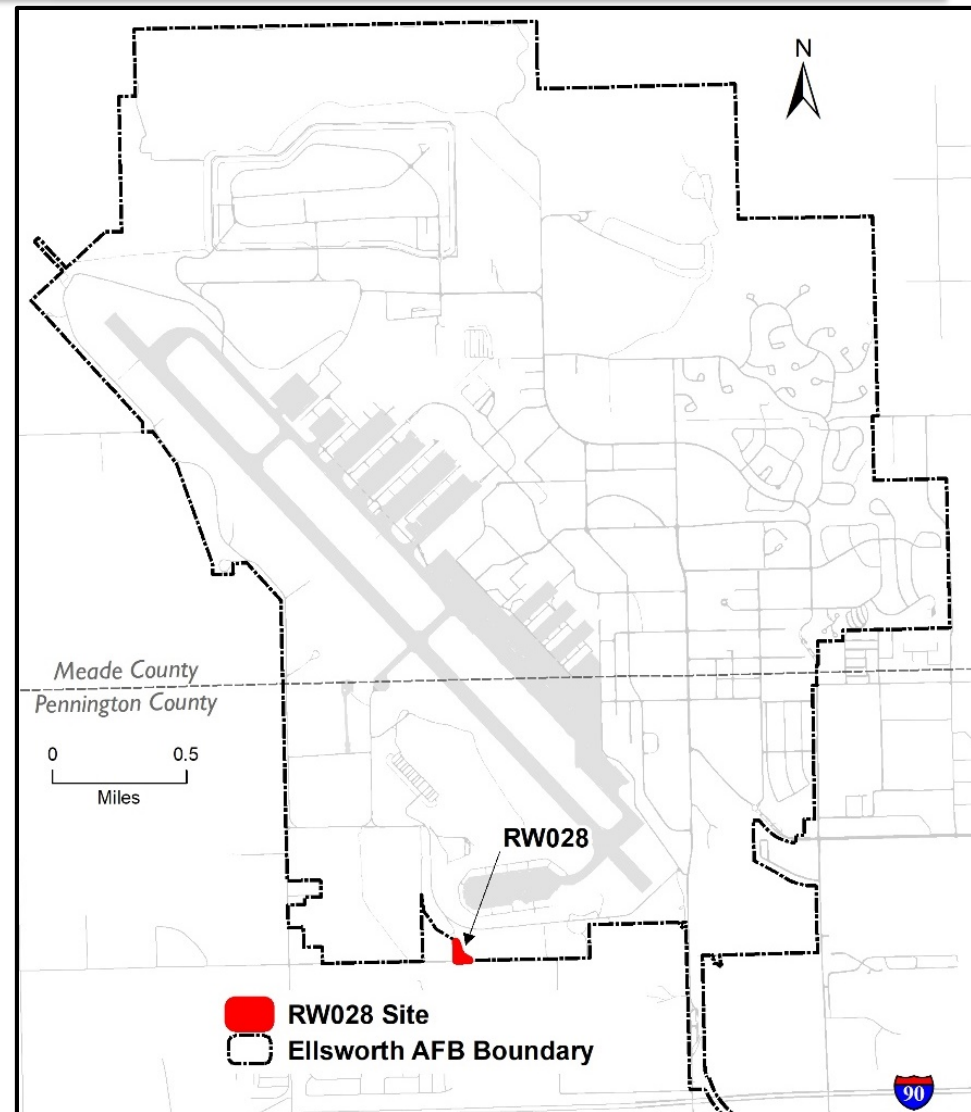


RW028



Low Level Radioactive Waste Burial Site

- 1997 Removal Action
 - Removed two concrete monoliths presumed to contain Low-Level Radioactive Waste
- 2010 routine repair of utilities found an additional monolith
- Removal action planned for 2019



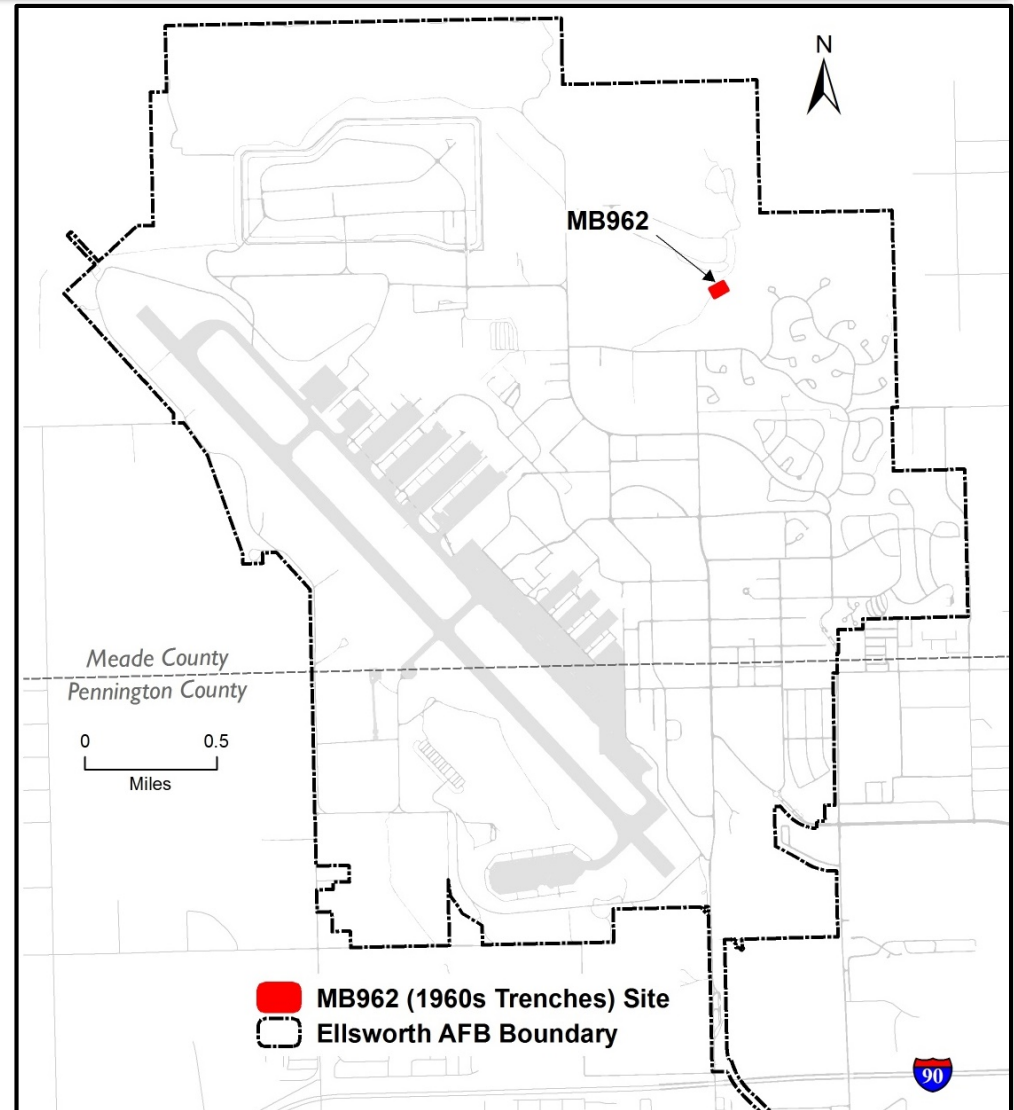


Military Munitions Response Program

Jet-Assisted Take-Off Bottle Site MB962



- Remedial investigation of Site MB962
 - Nine empty jet-assisted takeoff (JATO) bottles were removed in 2004
- Fieldwork September/October 2018
 - Intrusive investigation of historic burial trenches
 - Sampled soil and groundwater





PFOS and PFOA



➤ Man-made chemicals found in commonly used products

- Fire fighting foam
- Nonstick cookware (Teflon)
- Stain-resistant fabric/carpet
- Some food packaging

➤ 1970 - AF began using aqueous film forming foam(AFFF)

➤ May 2016 - EPA established lifetime health advisory levels for drinking water of 70 parts per trillion (ppt) for PFOS and PFOA (combined)

➤ Nov 2016 - Ellsworth discontinued use of legacy AFFF



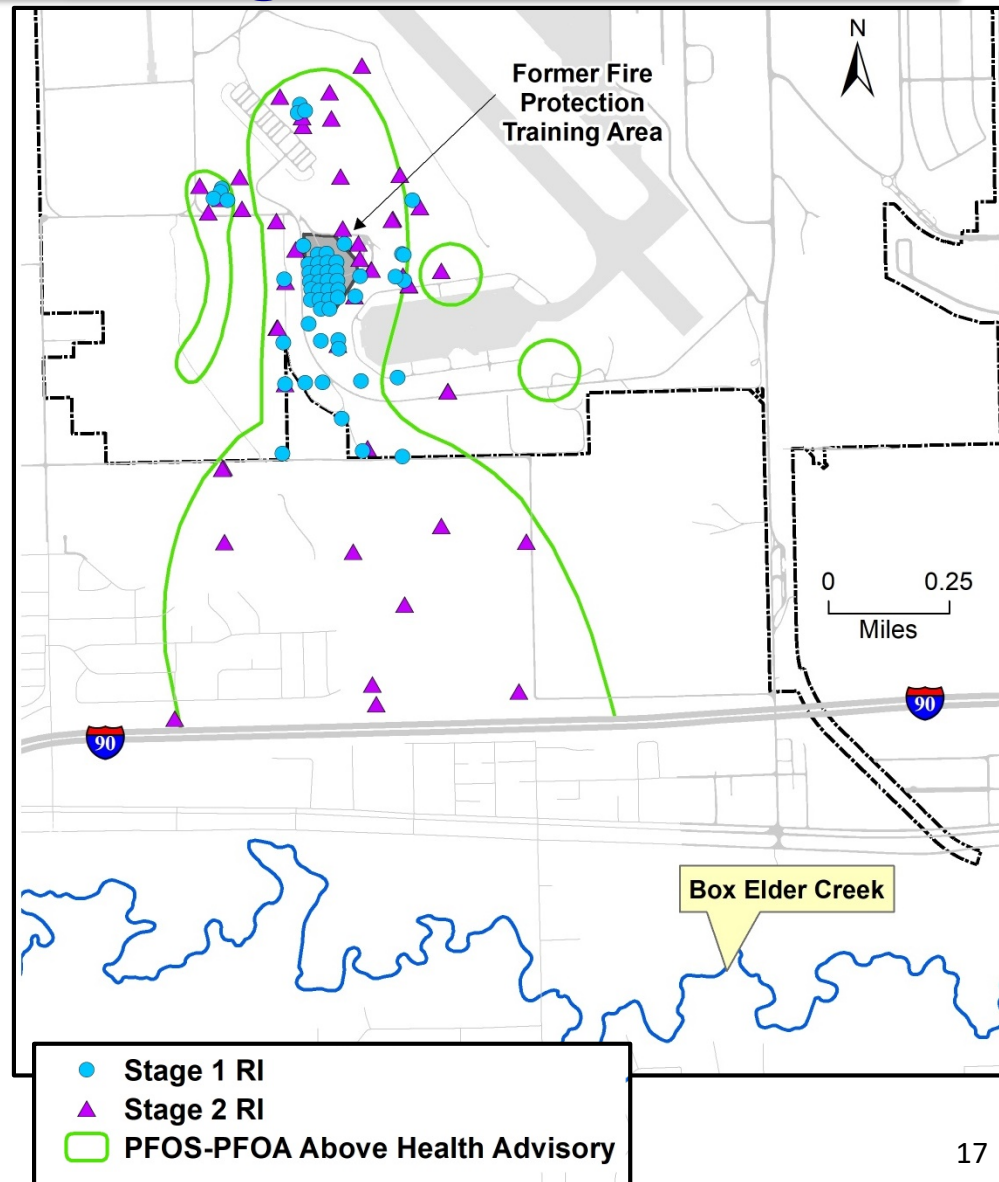


PFOS and PFOA

Remedial Investigation



- 2012: PFOS/PFOA first detected at the former fire training area
 - 2015: On-base sampling completed
 - 2017: Off-base sampling south to I-90 completed
 - 2018: Preparing Work Plan for sampling south of I-90



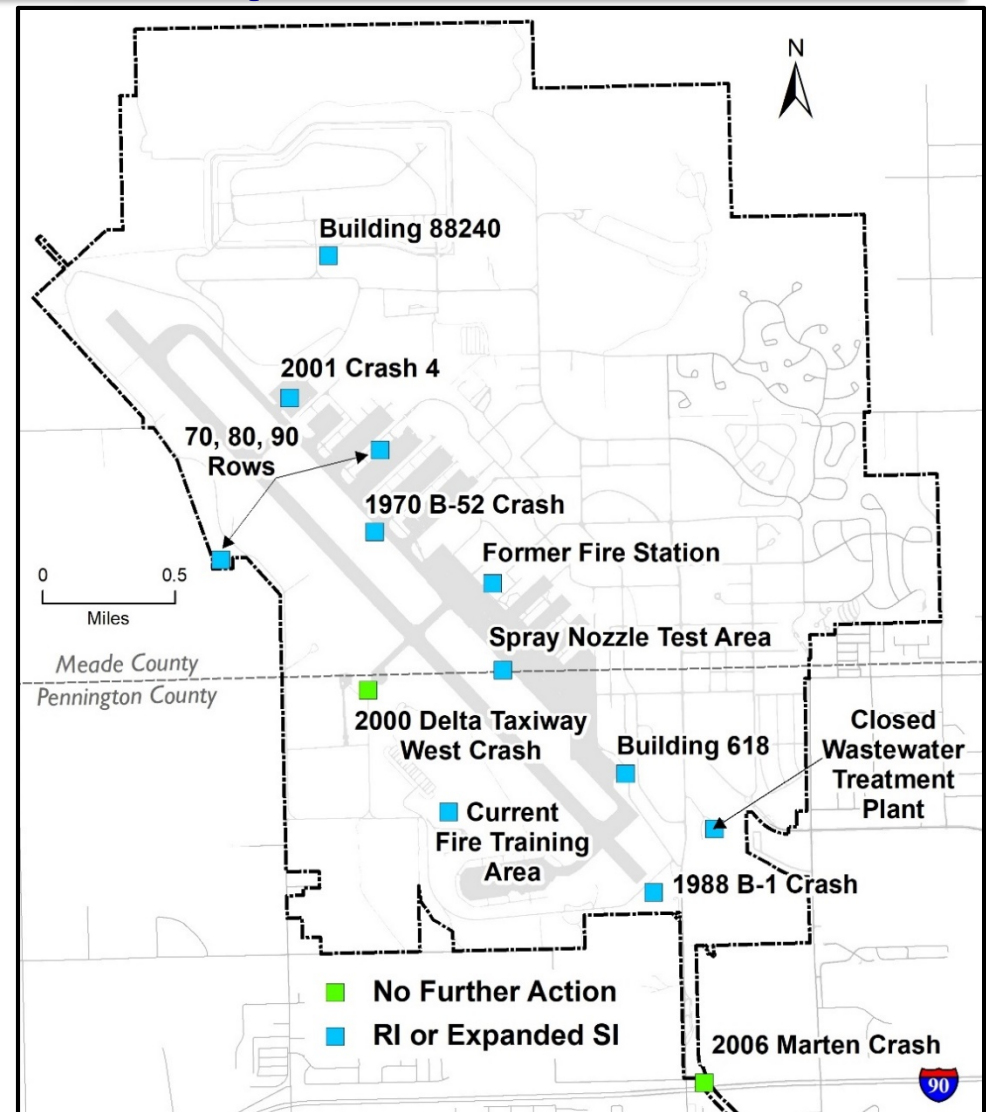


PFOS and PFOA



Basewide Site Inspection

- 2015: Preliminary Assessment identified 12 locations for further investigation
- 2016: Work plan under preparation
- 2018: Fieldwork completed
 - Draft report recommends investigations at 10 of the 12 sites





Off-Base Well Survey



- 18 Sep 18: PFOS-PFOA town hall meeting
- 19 Sep 18: Off-base water well sampling
 - 24 wells identified (shallow wells < 60 ft deep)
 - 12 drinking, 10 irrigation, 1 dry, 1 refused sampling
- 4 Oct 18: Ellsworth received sample results
 - Drinking well results: 5 - 13,870 ppt PFOS/PFOA
 - Irrigation well results: 4.42 – 17,370 ppt PFOS/PFOA
- 5 Oct 18: All impacted residents notified
 - Door-to-door notification complete/bottled water delivered
- 6 Oct 18: 2nd round of notifications complete
- 11 Oct 18: Residents provided notice of public meeting
- 24 Oct 18: Phase 2 of survey/sampling notices made
- 29 Oct 18: Phase 2 survey/sampling started
 - 31 drinking water wells identified and sampled
- Mid-to-late Nov: Sample results for Phase 2 expected



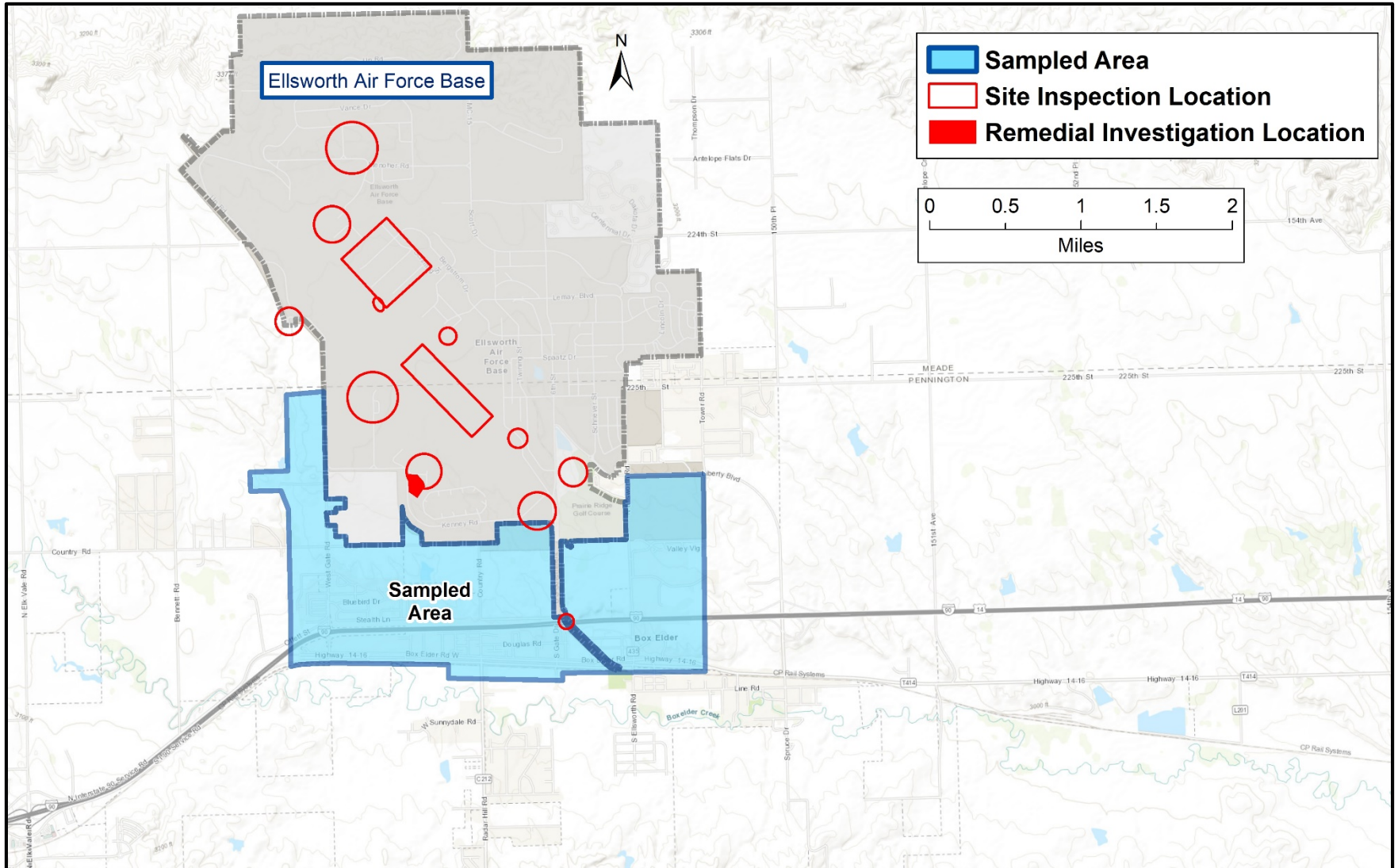
Off-Base Well Survey



- **ONLY** applies to shallow wells (<60 ft)
- **NO IMPACTS** if you live on **ELLSWORTH** or are connected to the Southwest Waterline
 - Ellsworth drinking water from Rapid City
 - Questions, contact 28 MDG (Bioenvironmental Engineering)
- **NO IMPACTS** to **BOX ELDER CITY WATER**
 - If you pay a **BOX ELDER WATER BILL**, you are connected to their water system
 - City of Box Elder's drinking water comes from deep wells (approx 4,500 ft deep)
 - Questions, contact the City of Box Elder

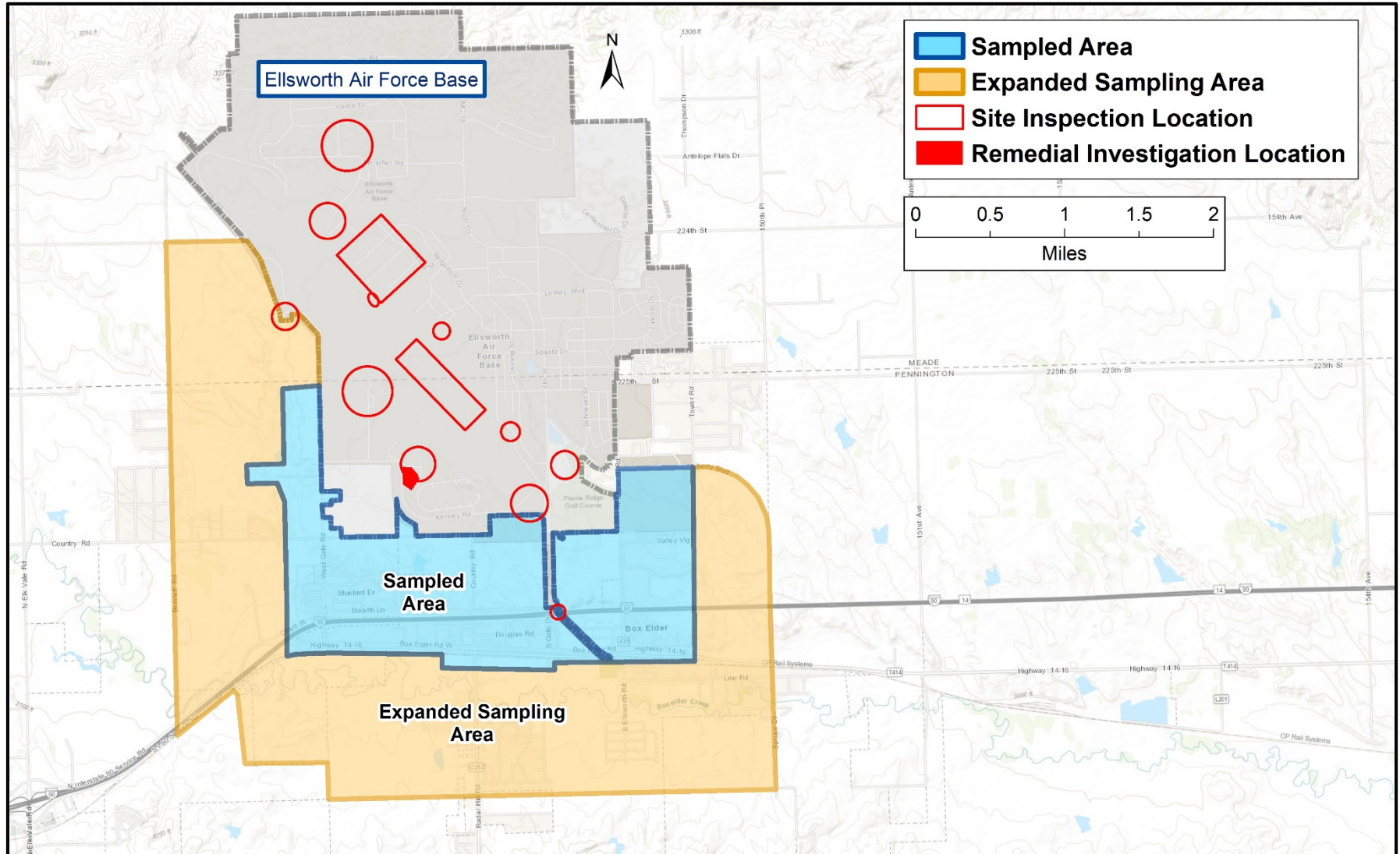


Map of Area Sampled





Map of Expanded Area





Future Restoration Actions



➤ Near-Term

- Complete RW028 removal action and investigation
- Complete MB962 remedial investigation report
- Complete 1,4-dioxane site inspection
- Complete vapor intrusion study for volatiles on-base
- Continue investigation of PFOS/PFOA
- Determine long term solution for impacted drinking water wells

➤ Long-Term

- Continue groundwater monitoring and IRT reinjections
- Implement long term solution for PFOS/PFOA impacted drinking water wells



Online Administrative Record



- Ellsworth's administrative records are available electronically *
- Online database is easily accessible to the public via a computer with internet access

<http://afcec.publicadmin-record.us.af.mil>

*The administrative record is also available for viewing online by visiting any public library that provides internet access, including:

Box Elder/Douglas School District Community Library
Douglas High School
420 Patriot Drive
Box Elder, SD 57719



Closing Comments



- Closing Comments
 - Colonel John R. Edwards
- Breakout Q & A
 - 2Lt Daniel B. Rosenfield

