

COMMON CHALLENGES TO IMPLEMENTING THE REMEDY: CAMP FANNIN

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BOTTOM LINE UP FRONT

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There are common challenges with implementing a subsurface removal action remedy, especially with our older RODs

Achieving Response Complete for older RODs requires increased risk management and contract flexibility

Need to monitor for, and prepare to adjust for:

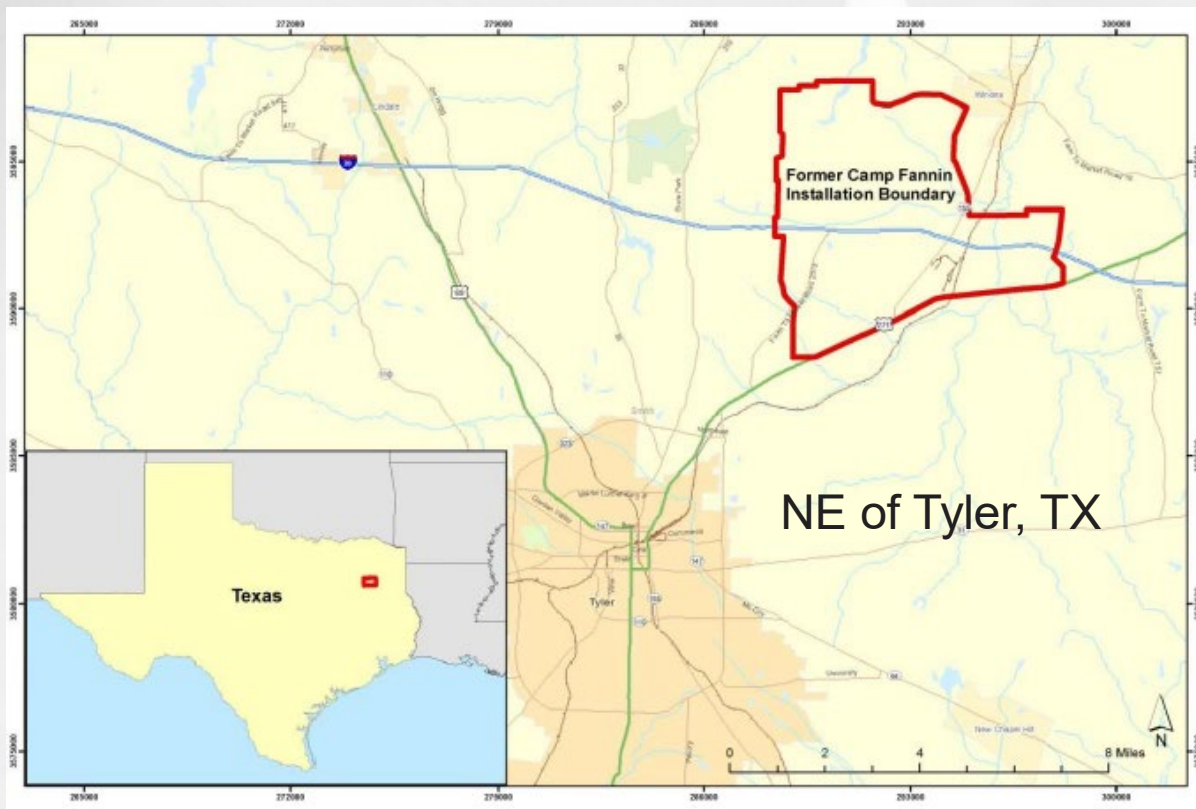
- Remedy implementation challenges
- Conceptual Site Model changes



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CAMP FANNIN BACKGROUND

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1942-1946: 14k-acre camp used for training, numerous ranges

2011 Remedial Investigation

- DGM and analog transects and grids
- Residential, agricultural, recreational land uses
- Many landowners
- Four MRSs with unacceptable MEC risk

2013 Feasibility Study (4 Alternatives)

- No Action
- LUCs
- LUCs + Surface MEC Removal
- LUCs + Surface/Subsurface MEC Removal

2013 Proposed Plan

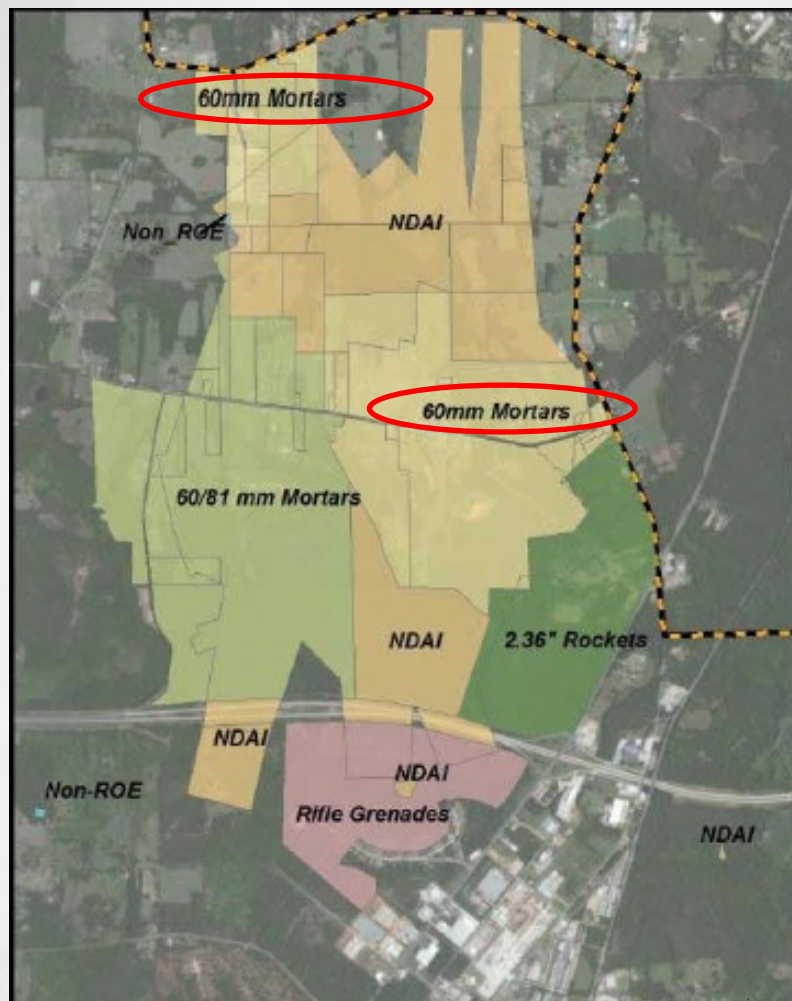
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FOCUS ON 775-ACRE 60MM MORTARS MRS

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2017 Record of Decision

- Remedial Action Objective: “... minimize direct contact with MEC during receptor activities (e.g., residential, light agricultural, light commercial and recreational) on the ground surface and to a maximum anticipated receptor contact depth of 2 ft. bgs.”
- Selected Remedy was LUCs + Surface/Subsurface MEC Removal
- Remedy Components
 - LUCs (public education, 3Rs mtgs & fact sheets)
 - Surface MEC removal (near-surface/partially buried items to a depth of 6 inches bgs) “in accessible areas across the MRS (i.e., areas not covered by roads, parking lots or buildings, or heavily wooded or forested areas or other conditions that would prevent access) totaling approximately 775 acres”
 - Subsurface MEC removal over 392 acres to 1 ft bgs “(the maximum depth where MEC and MD were found during the RI)”
 - Subsurface removal includes 97-acre area planned for residential development



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RA PROJECT BACKGROUND

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2017 Remedial Action initiated

Numerous challenges

- One of the first large AGC remedial actions awarded
- Many landowners
 - Some ROE denials
 - Numerous evacuation denials
- FS and ROD didn't adequately define or address areas "inaccessible" to surface/subsurface removal
- Equipment changes and learning curve
 - SLAM and One-Pass
- Guidance changes in the works
 - EM 200-1-15 published in 2018



AGC UltraTEM towed array collecting data

Rifle Grenade MRS:
LUCs only



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RA ACCOMPLISHMENTS

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Work Completed

- 2,196 MEC Items Removed
- Surface MEC removal completed in 624 of 775 acres (80%)
- Subsurface MEC removal in 208 of 392 acres (53%)





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EVALUATING RA COMPLETION

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For Camp Fannin, we recognized issues impacting ability to achieve RC:

- Aspects of the remedy that weren't or can't be implemented
- Changes in the Conceptual Site Model that could impact protectiveness

An assessment has been initiated to:

- Catalog and quantify those issues
- Determine path forward to address those issues

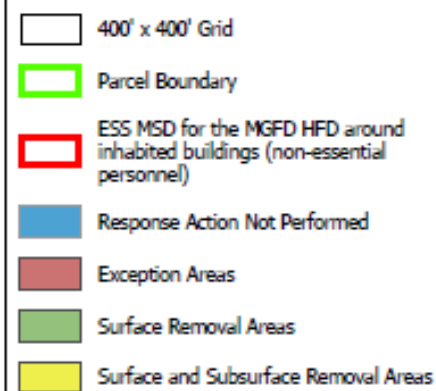
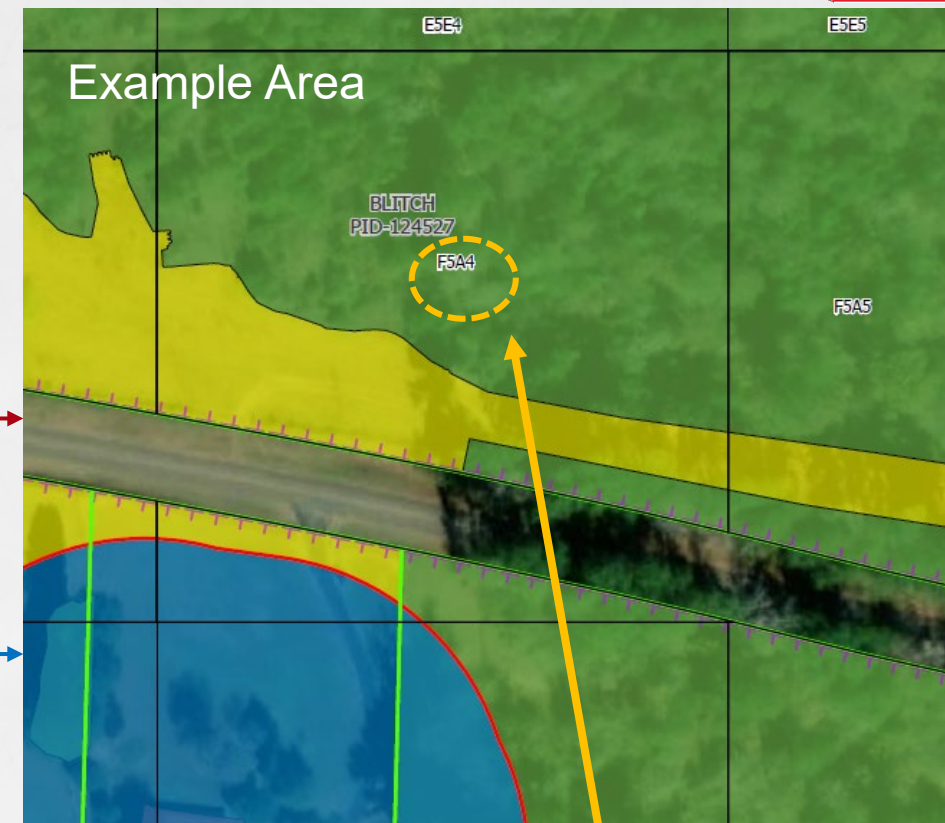


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RA WORK EXAMPLE

First, consider aspects of the remedy

- **Response Action Not Performed**
 - In this case it is around an inhabited building
 - Was it excluded because landowner refused to evacuate?
 - What documentation do we have regarding evacuation attempts?
 - Was ROE process in Handbook followed?
 - Was it geophysically mapped, & if so, are there TOI?
- **Exception Area**
 - What is the nature of the exception?
 - Does it meet one of the ROD exclusion criteria? (*areas not covered by roads, parking lots or buildings, or heavily wooded or forested areas or other conditions that would prevent access*)? If so, which? If not, why was it excluded?
 - Are there TOI in this area?
- **Surface and Surface/Subsurface Removal Areas**
 - Are they in accordance with the ROD?



Nine MEC items in Grid F4A4

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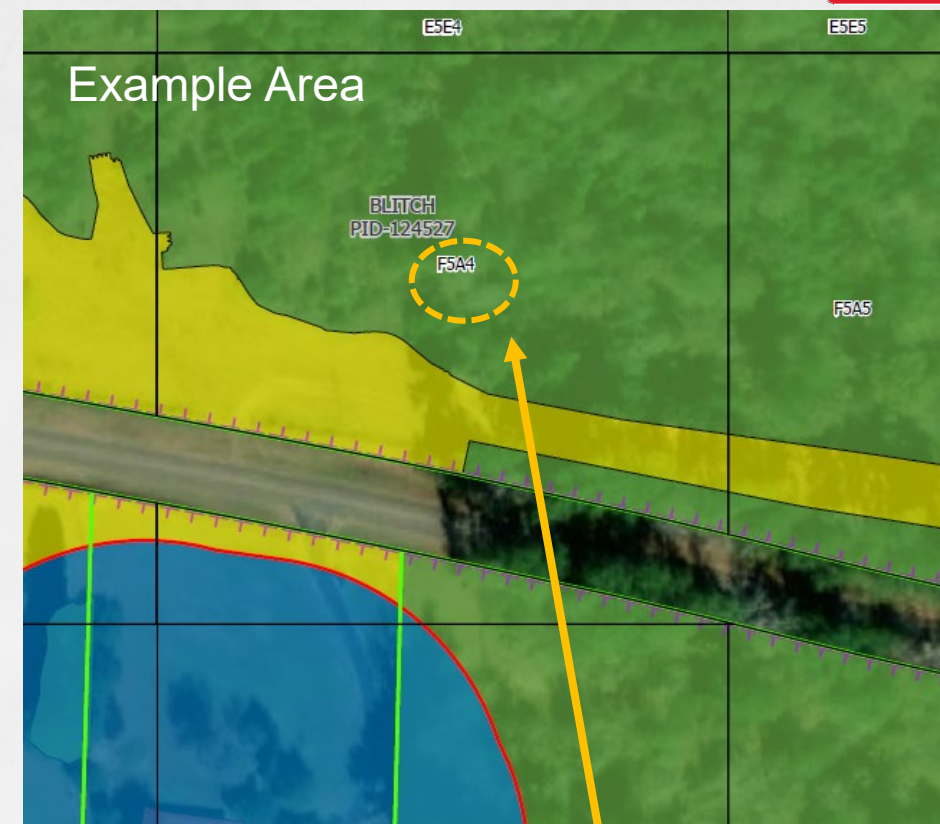
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RA WORK EXAMPLE

Second, evaluate for CSM changes

- Munitions Findings
 - Are munitions types found consistent with CSM?
 - If not, was the target library modified accordingly?
 - Where were items found?
 - Is the lateral extent consistent with CSM?
 - What is the vertical profile of the findings?
 - Note that the ROD indicated clearance depth of 1 ft bgs, “the maximum depth where MEC and MD were found during the RI” but RAO land use depth is 2 ft.
- Land Use
 - Is the land use different from what was described in the ROD?
- Protectiveness
 - Are there CSM changes that impact protectiveness of the remedy? Is 1 ft removal depth protective?

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Nine MEC items in
Grid F4A4

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POTENTIAL RA GAPS

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Potential Incomplete Work

- Surface MEC removal in 151 acres (20%)
- Subsurface MEC removal in 184 acres (47%)
- Subsurface MEC removal in 97-acre area planned for residential development



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POTENTIAL RA GAPS

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Current Assessment of Remedy Completion

- How many acres were excluded due to roads, parking lots, or buildings?
 - ROD indicates these will be excluded, but site maps need to clearly show these areas
- How many acres were excluded because they were “heavily wooded or forested”?
 - Same as above, ROD excludes these areas, but maps need to clearly show them
- How many acres were excluded due to “other conditions that would prevent access”?
 - What are those “other conditions”? How was evacuation refusal documented?
- Evaluate each incomplete acre to determine if:
 - a. Its exclusion is allowed by the current ROD
 - b. Additional field work is needed to complete the area
 - c. Removal can’t be done, and ROD change is needed
 - d. Removal can’t be done, and delineation is needed
- For this site, ROD definition of “surface removal” as near-surface/partially buried items to a depth of 6 inches bgs – does this warrant change for remaining work (if any)?



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POTENTIAL RA GAPS

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Current Assessment of Impact of CSM changes

- Were munitions types found consistent with CSM?
- Is vertical profile of findings consistent with CSM (maximum depth of 1 ft)?
- Is lateral extent consistent with CSM?
- Are there land use changes that impact protectiveness?
- Evaluate each CSM change to determine if:
 - a. Removal completed is protective
 - b. Additional field work is needed to provide protectiveness (for instance, additional TOI)
 - c. ROD change and additional field work is needed to provide protectiveness (for instance, excavating deeper anomalies)
 - d. Delineation and additional field work is needed to provide protectiveness (for instance, expanding removal action footprint)

Current Assessment will assess Usability of RA Data

- Provide documentation that previous RA data is usable in one DUA



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LESSONS LEARNED

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Monitor for CSM changes throughout Remedial Action

- As each change is identified, evaluate impacts it has on protectiveness, if any
- Potentially will need contract modification

Monitor for remedy implementation issues throughout Remedial Action

- As each planned action can't be done in a given area, document carefully:
 - What was done to try to do it?
 - Why can't it be done? Pictures say a thousand words
 - Who approved not doing it?
 - How will we ensure protectiveness for the area?
- Keep a running tally of these issues

Start planning early for ROD Changes and/or Delineation

- And all those entail....



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QUESTIONS?

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