

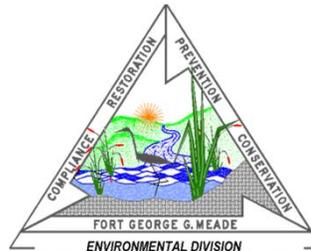
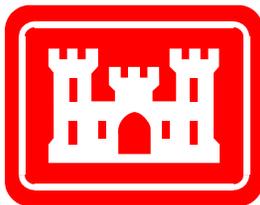


Fort George G. Meade



Restoration Advisory Board Meeting January 15, 2015

Preliminary Assessment/Site Inspection Update
Areas of Interest Located South of Route 32



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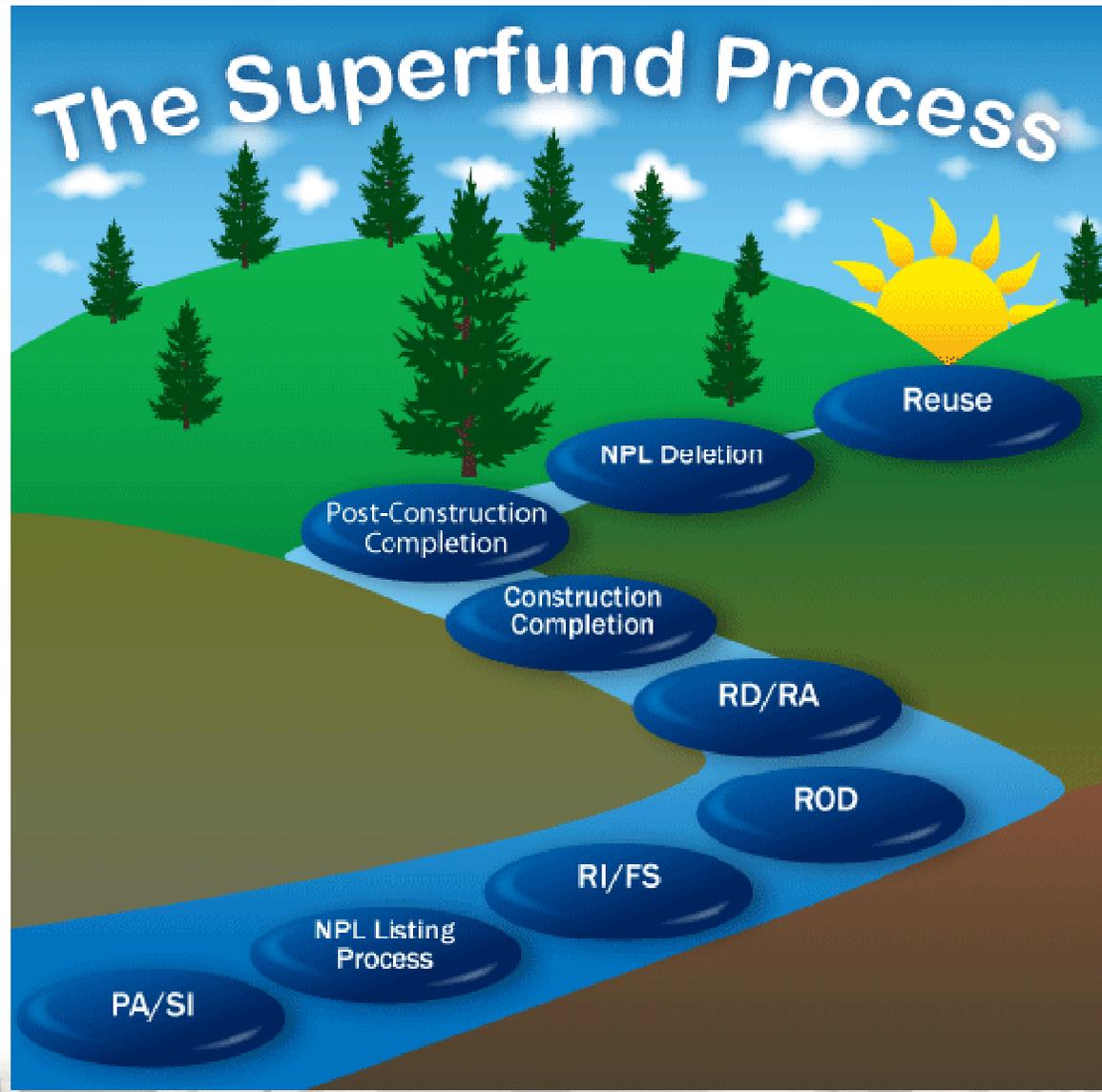


Ft Meade PA/SI



- Last RAB update of the Preliminary Assessment/ Site Inspection (PA/SI) was November 2014.
- A PA/SI is an installation wide environmental study.
- The PA was conducted to assess the status of sites for closure, or, where appropriate, recommend the collection of additional data (the SI) to determine if the site can be closed or if it needs to be carried further in the CERCLA process.







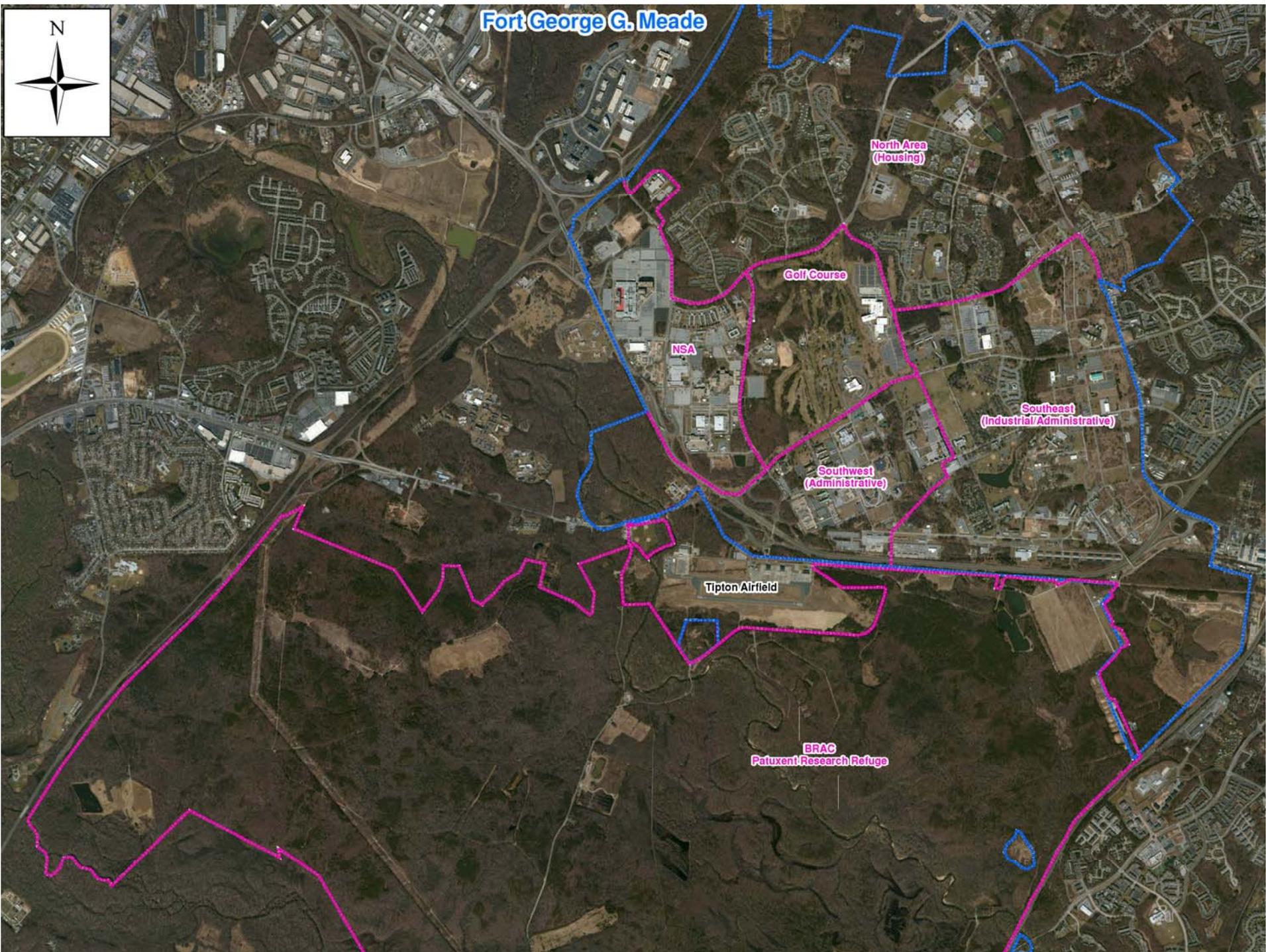
PA/SI

Areas of Interest (AOIs)

- AOIs were geographically grouped
 - Golf Course
 - North
 - Southeast
 - Southwest
 - **South of Route 32**



Fort George G. Meade



North Area
(Housing)

Golf Course

NSA

Southwest
(Administrative)

Southeast
(Industrial/Administrative)

Tipton Airfield

BRAC
Patuxent Research Refuge



AOIs Located South of Route 32



- 10 AOIs.
- No further action (NFA) approval for 3 AOIs during PA stage (FGGM 21 Medical Waste Site, FGGM 72 POL Storage Tanks, FGGM 75 USTs Prior to 1984).
- Field work for the remaining 7 AOIs completed.
- Lab data received and validated and Risk-Based Screening performed on the results.
- Draft Report for AOIs Located South of Route 32 submitted to EPA and MDE 11 March 2014. Comments received 7 May 2014 (MDE) and 27 May 2014 (EPA).





Recommendations for the Seven AOIs that Completed the SI



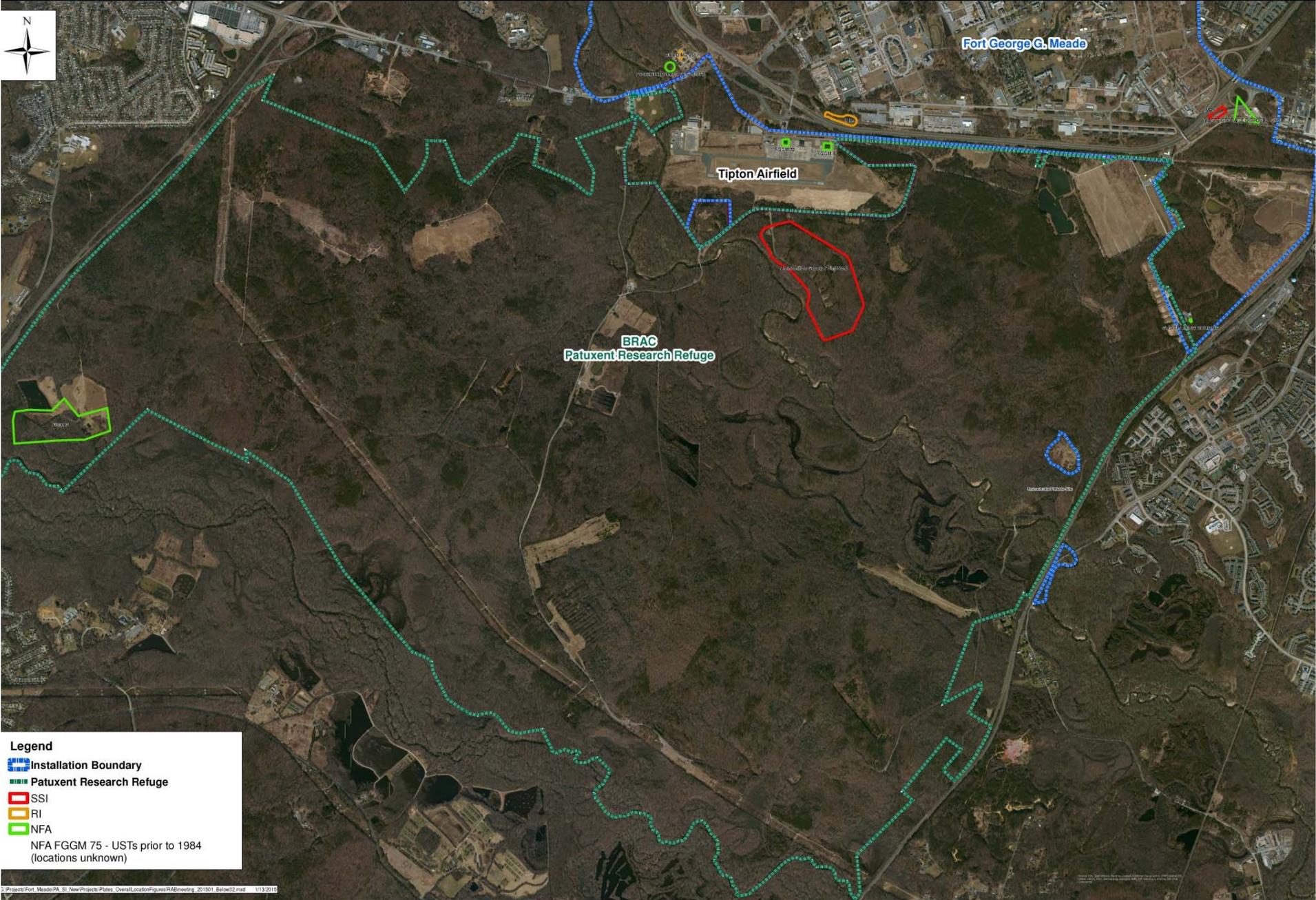
Three AOIs Recommended for NFA Based on SI

- Building 73
- Possible Dump Site G
– 1957
- Waste Storage/
Disposal Area – 1938

Based on SI, Four AOIs May Require Further Action

- ASP 2
- Building 9581
- Motor Pool-6
- Inactive Landfill 4





- Legend**
- - - Installation Boundary
 - - - Patuxent Research Refuge
 - SSI
 - RI
 - NFA
- NFA FGGM 75 - USTs prior to 1984
(locations unknown)



Review of Risk



- Maximum detected concentrations (MDCs) of individual chemical compounds are compared to the most current EPA (2014) residential (if soil) or tap water (if groundwater) regional screening levels (RSLs).
- Chemicals become chemicals of potential concern (COPCs) if the MDC is greater than RSL.
- COPC can be eliminated if less than background.
- Risk calculated for each COPC then added to obtain cumulative risk.
- Cumulative risk for the AOI compared to site-specific thresholds:
 - Cancer risk: 5×10^{-5}
 - Non-cancer hazard index: 0.5





Key for the Remaining Slides

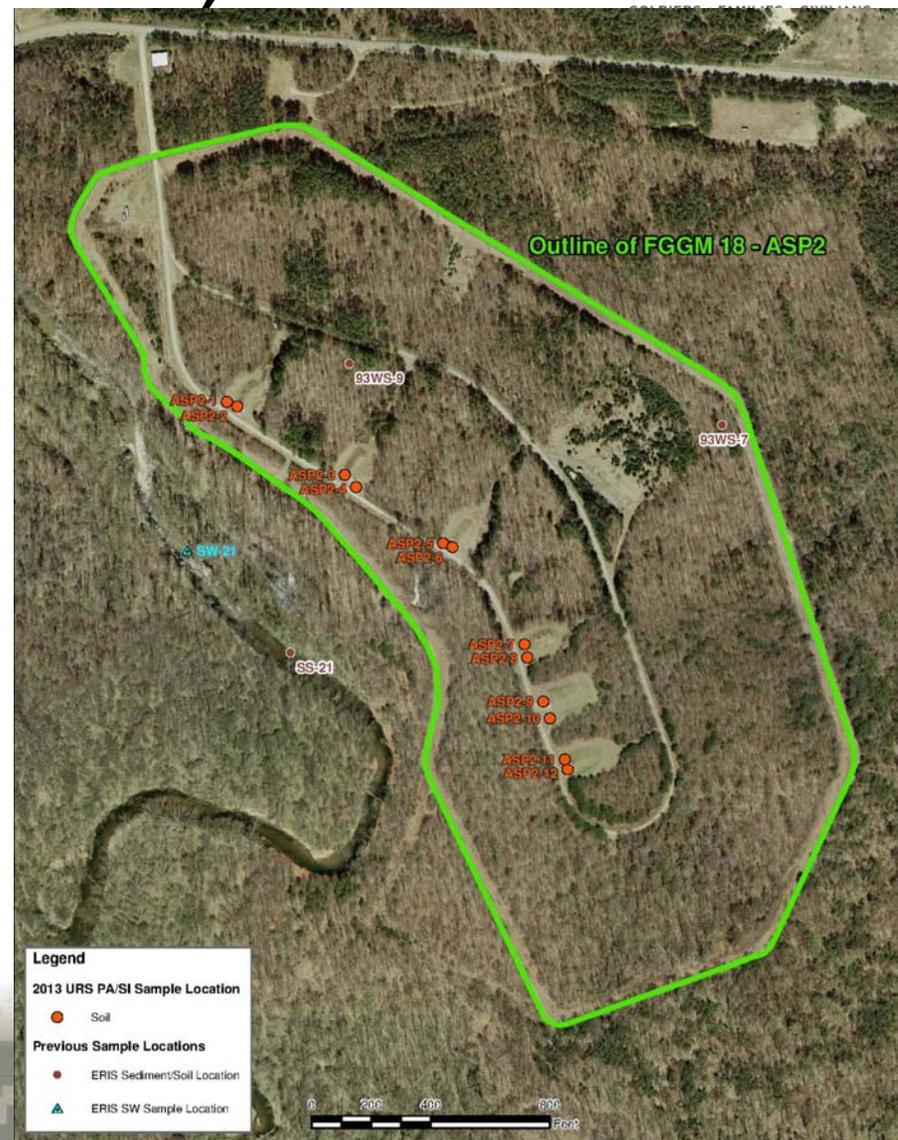


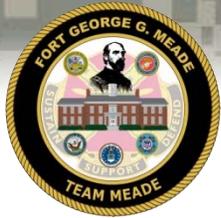
- Figure showing location of AOI.
- Figure of AOI with all historic and PA/SI sampling.
- Why it is an AOI.
- Calculated cancer and non-cancer risk for media (soil or groundwater) that requires further investigation.
- Chemical compounds that contribute the most to the elevated risk levels.
- MDC of those chemical compounds and the EPA Maximum Contaminant Level (MCL) or Regional Screening Level (RSL) of that chemical compound.





Ammunition Supply Point (ASP) 2





Ammunition Supply Point 2



- Former ammunition storage inside 6 igloos with concrete floors and walls.
- Previous sediment, surface water, and soil samples.
- PA/SI surface soil:
 - Cancer risk: 1.6×10^{-5}
 - Highest non-cancer target organ hazard: 1.6
- No groundwater samples collected.

- Cancer risk – N/A
- Non-cancer hazard – iron and cobalt

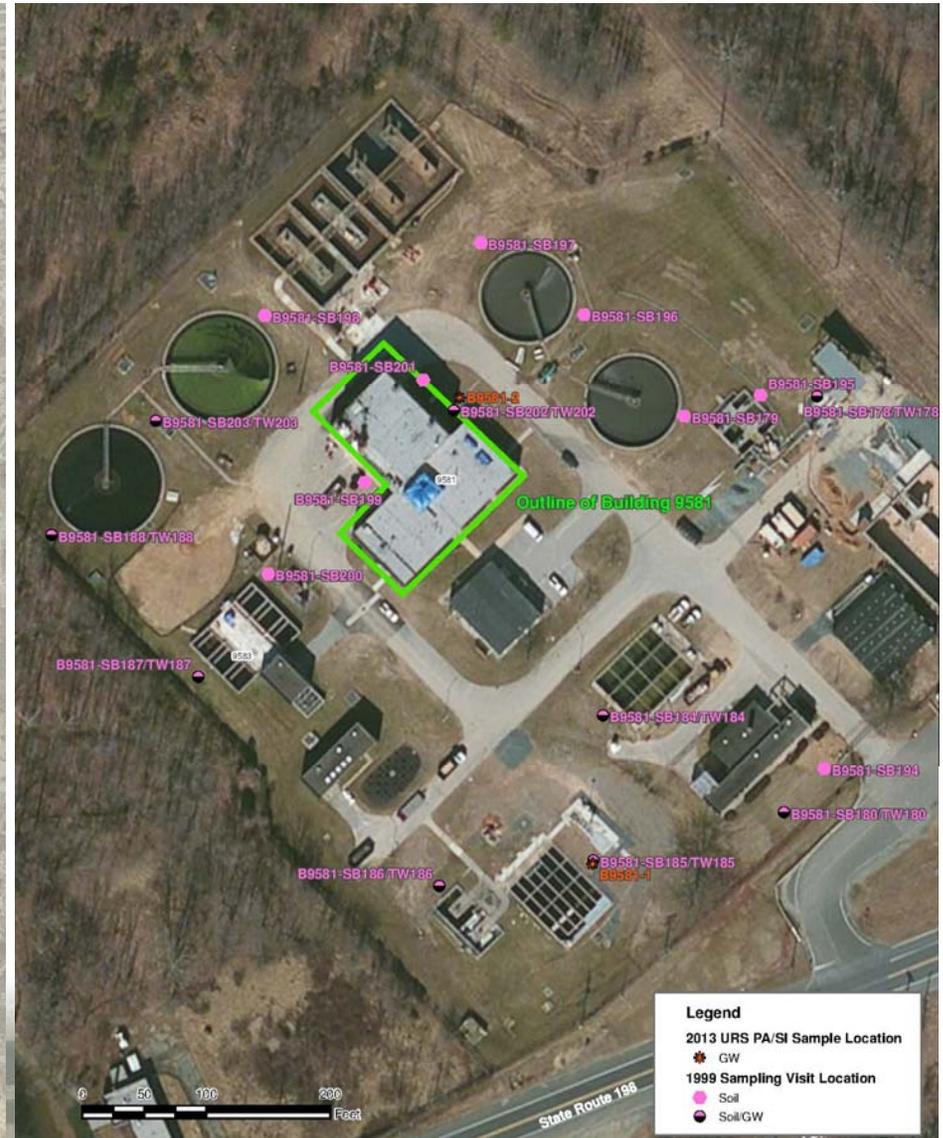
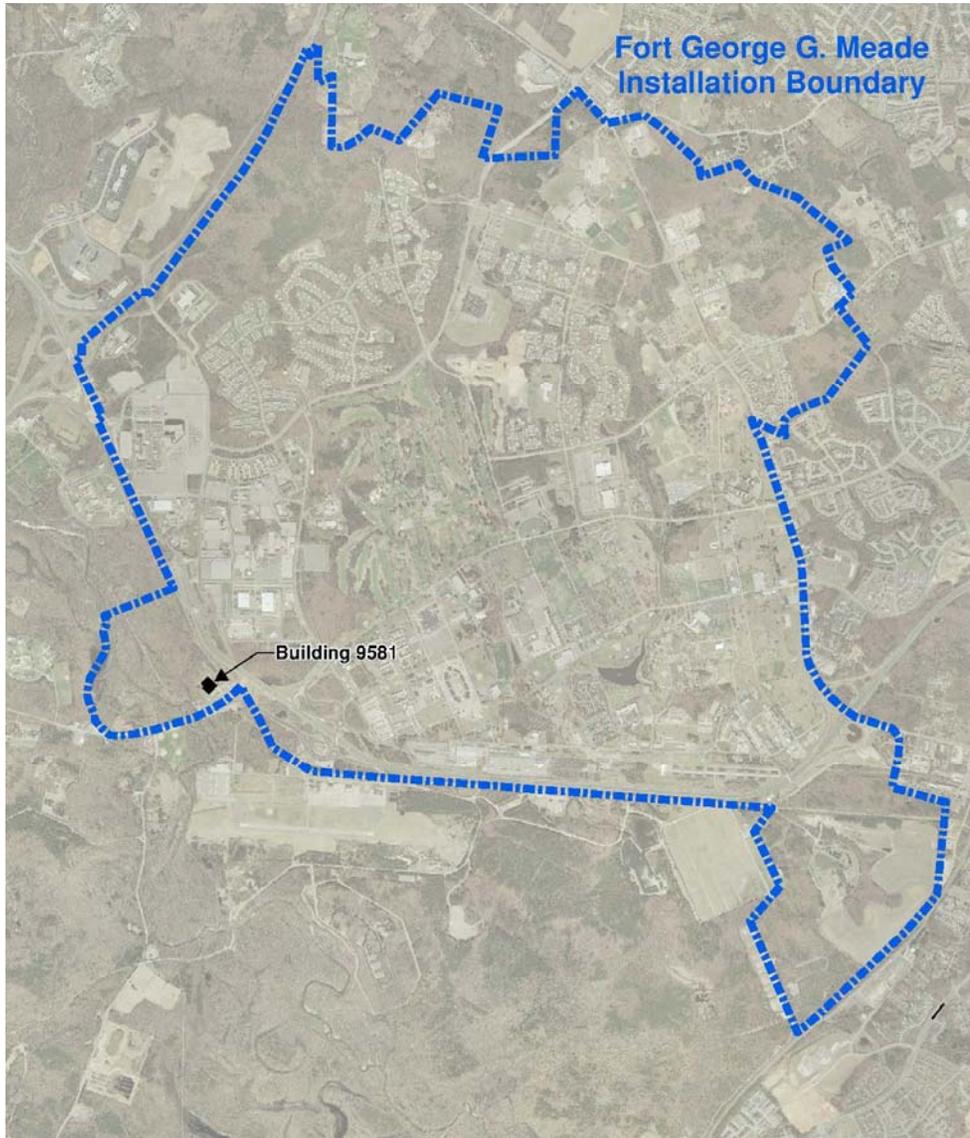
Compound	MDC	RSL
Iron	50,000	55,000
Cobalt	16	23

Recommend Supplemental Site Investigation (SSI) for breakdown products of the chemical agent identification set (CAIS) chemicals.





Building 9581





Building 9581



- Sewage treatment facility.
- Previous surface and subsurface soil samples.
- PA/SI Groundwater with total metals analysis:
 - Cancer risk: 1.2×10^{-3}
 - Highest non-cancer target organ hazard: 3.2
- PA/SI Groundwater with dissolved metals analysis:
 - Cancer risk: 2.1×10^{-5}
 - Highest non-cancer target organ hazard: 2.3
- Cancer risk – chromium and arsenic
- Non-cancer hazard – manganese, arsenic, cobalt, chromium, and iron

Compound	MDC	MCL
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(total metals)

Chromium	38.2	100
Arsenic	7.9	10
Manganese	800	N/A
Cobalt	7.3	N/A
Iron	7,100	N/A



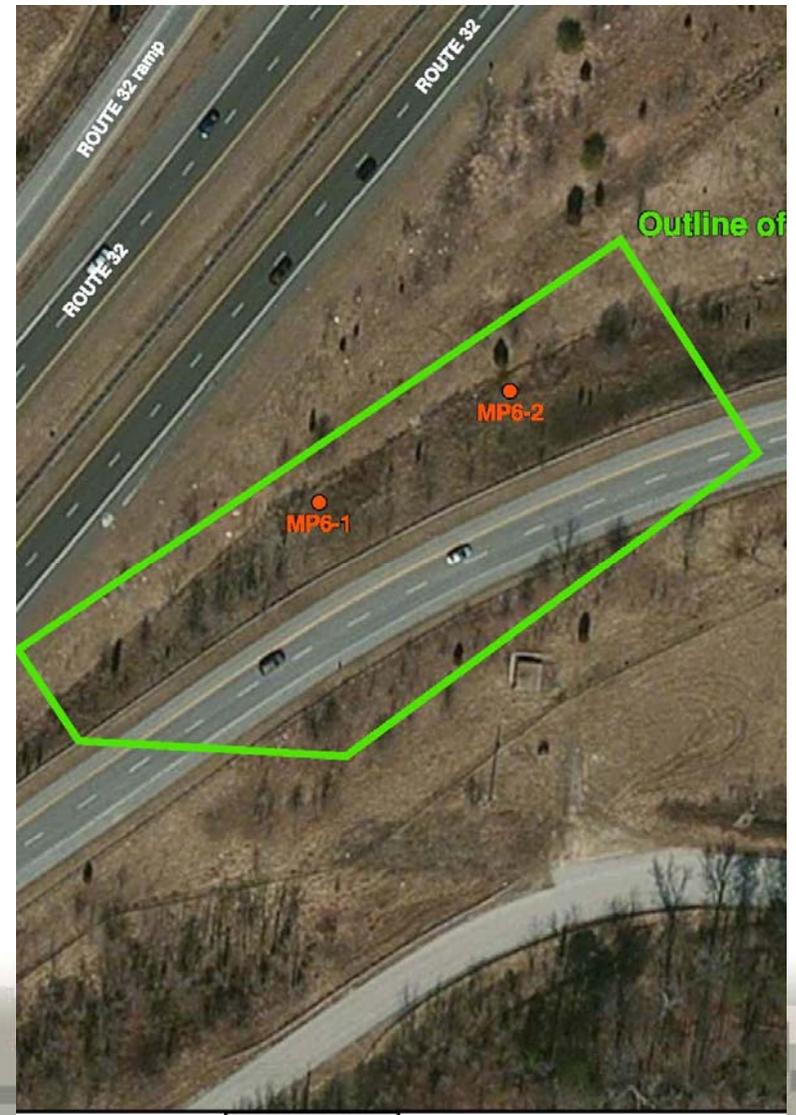
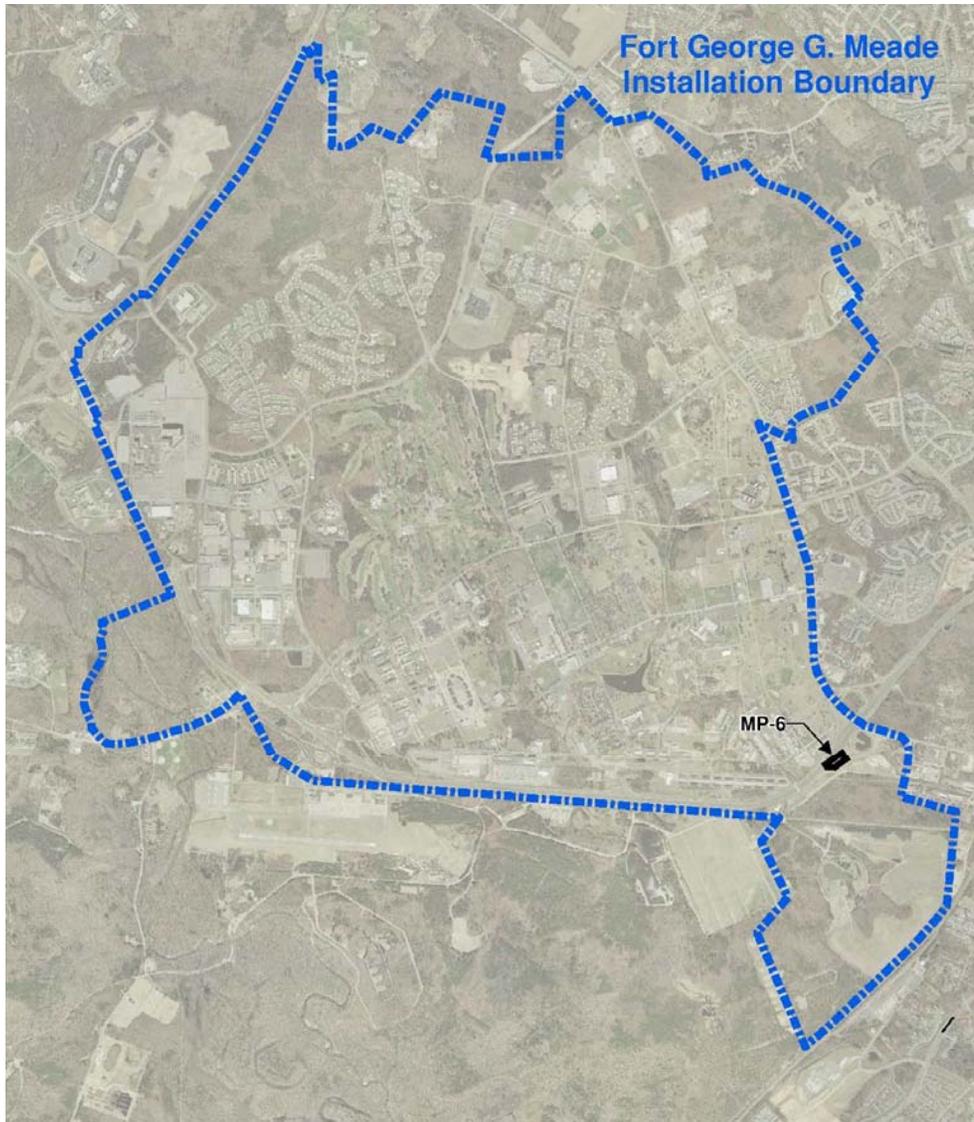
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Motor Pool-6



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Motor Pool-6



- Former motor pool.
- No previous sampling.
- PA/SI subsurface soil:
 - Cancer risk: 1.2×10^{-4}
 - Highest non-cancer target organ hazard: 0.6
- No groundwater samples collected. AOI overlies OU-4.
- Cancer risk – chromium
- Non-cancer hazard – iron

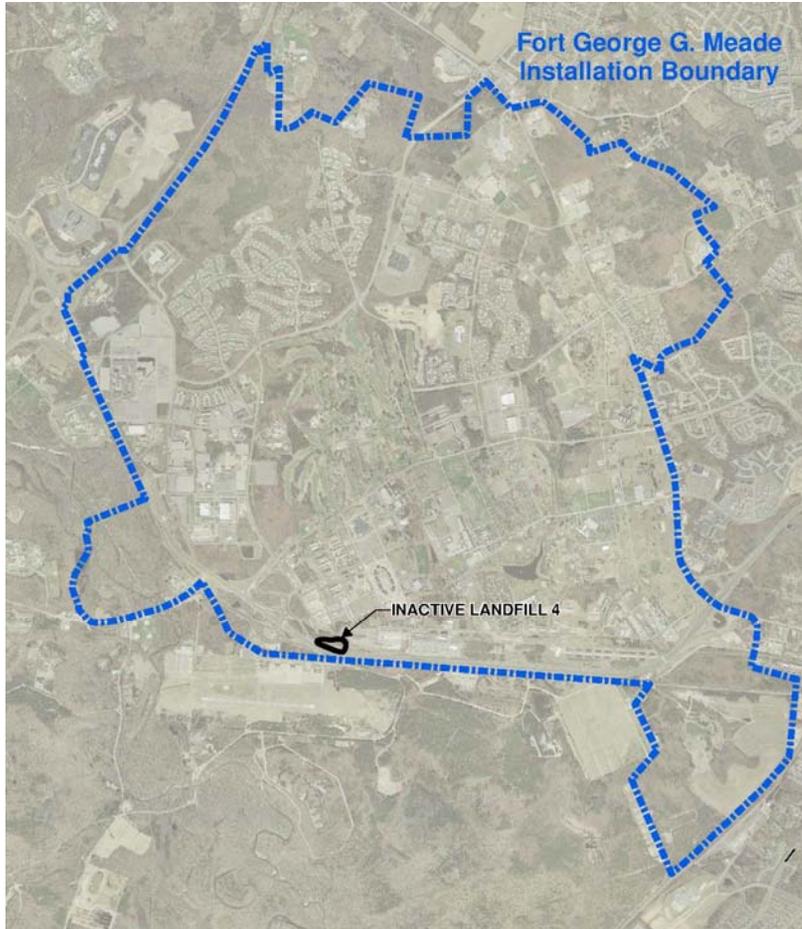
Compound	MDC	RSL
Chromium	32	0.29
Iron	26,000	55,000

Recommend SSI for chromium speciation.





Inactive Landfill (IAL) 4



USACHPPM - U.S. Army Center for Health Promotion and Preventive Medicine (2008)

BCPSI - Base Closure Parcel Site Inspection (EA, 1992)



Inactive Landfill 4



- Former rubble landfill.
- Previous sediment and groundwater samples.
- PA/SI surface soil:
 - Cancer risk: 4.4×10^{-5}
 - Highest non-cancer target organ hazard: 1.6
- No PA/SI groundwater samples collected.
- Cancer risk – N/A
- Non-cancer hazard – 2,3,7,8-TCDD, iron, copper, and arsenic

Compound	MDC	RSL
2,3,7,8-TCDD	4.2E-5	5.1E-5
Iron	43,000	55,000
Copper	1,500	3,100
Arsenic	17	34





Questions?



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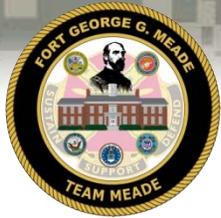


Acronyms and Abbreviations



- 2,3,7,8-TCDD – 2,3,7,8-Tetrachlorodibenzo-p-dioxin
- AOIs – Areas of Interest
- ASP – ammunition supply point
- BCPSI – Base Closure Parcel Site Inspection
- CAIS – chemical agent identification set
- CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act
- COPC – Chemicals of Potential Concern
- EPA – U.S. Environmental Protection Agency
- FGGM – Fort George G. Meade
- IAL – Inactive Landfill
- MCL – Maximum Contaminant Level





Acronyms and Abbreviations (continued)



- MDCs – Maximum Detected Concentrations
- MDE – Maryland Department of the Environment
- N/A – not applicable
- NFA – No Further Action
- NPL – National Priorities List
- OU – operable unit
- PA – Preliminary Assessment
- POL – petroleum oil lubricant
- RAB – Restoration Advisory Board
- RI – Remedial Investigation
- RSLs – Regional Screening Levels





Acronyms and Abbreviations (continued)



- SI – Site Inspection
- SSI – Supplemental Site Inspection
- ug/L – micrograms per liter
- UST – underground storage tank
- USACHPPM – U.S. Army Center for Health Promotion and Preventive Medicine





Points of Contact



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