

# **DERP Forum**

**Strengthening Relationships with our Regulatory Partners**

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**St. Louis, Missouri**

**May 8-9, 2019**

# **Challenging IRP Sites**

## **Redstone Arsenal Groundwater Sites**

### **RSA-117 and RSA-146**

### **A Path Forward**



## **U.S. Army Environmental Command**

**MISSION: Deliver cost-effective environmental services globally to enable Army readiness.**

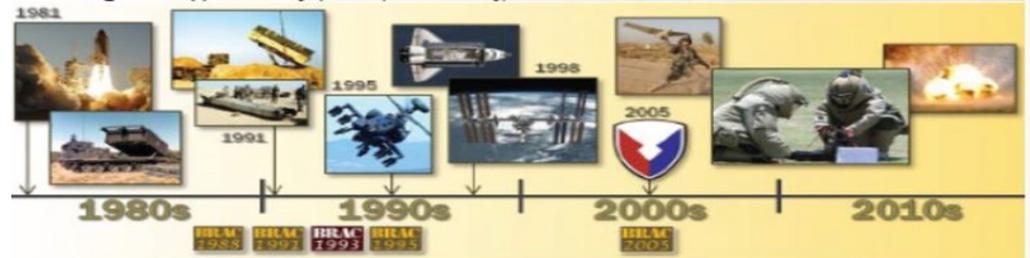
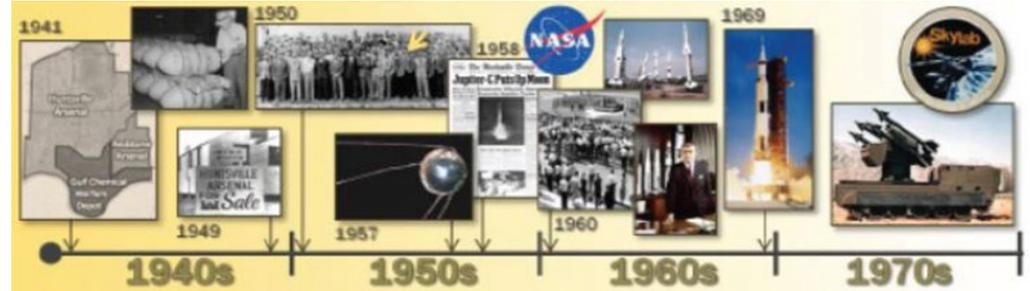
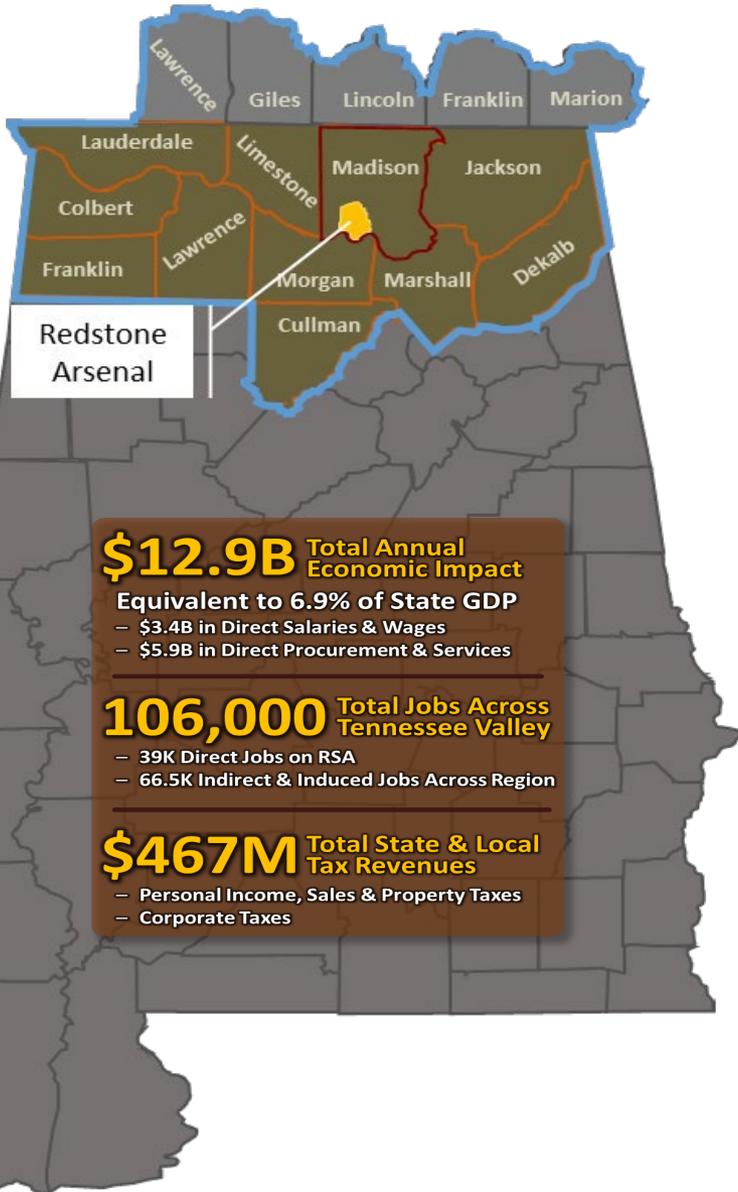
**VISION: Provide premier environmental solutions for our Army and our nation.**

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**<https://www.aec.army.mil/>**

# Operations / Background

## Meeting the Nation's Needs Over Time



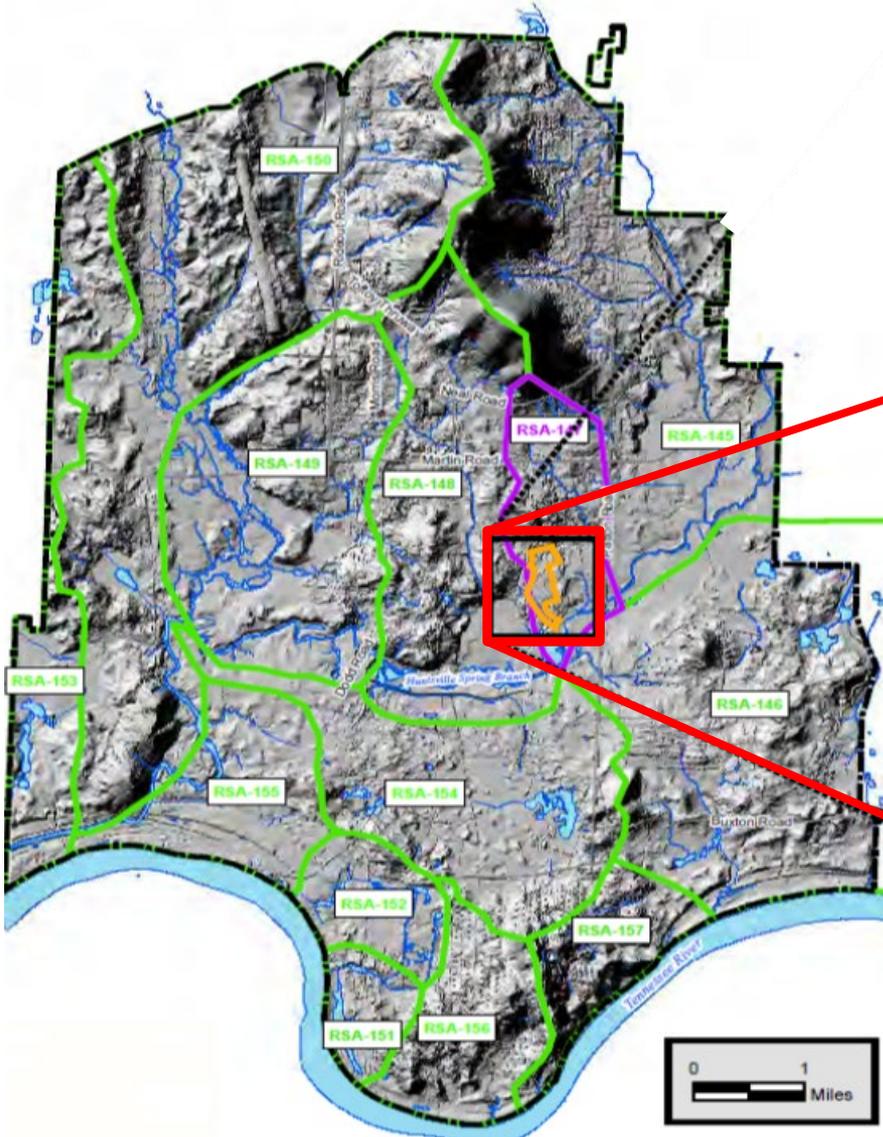
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# RSA-117 Overview



85 Acres

DDT, VOCs, SVOCs, and PCBs

DNAPL - chlorobenzene



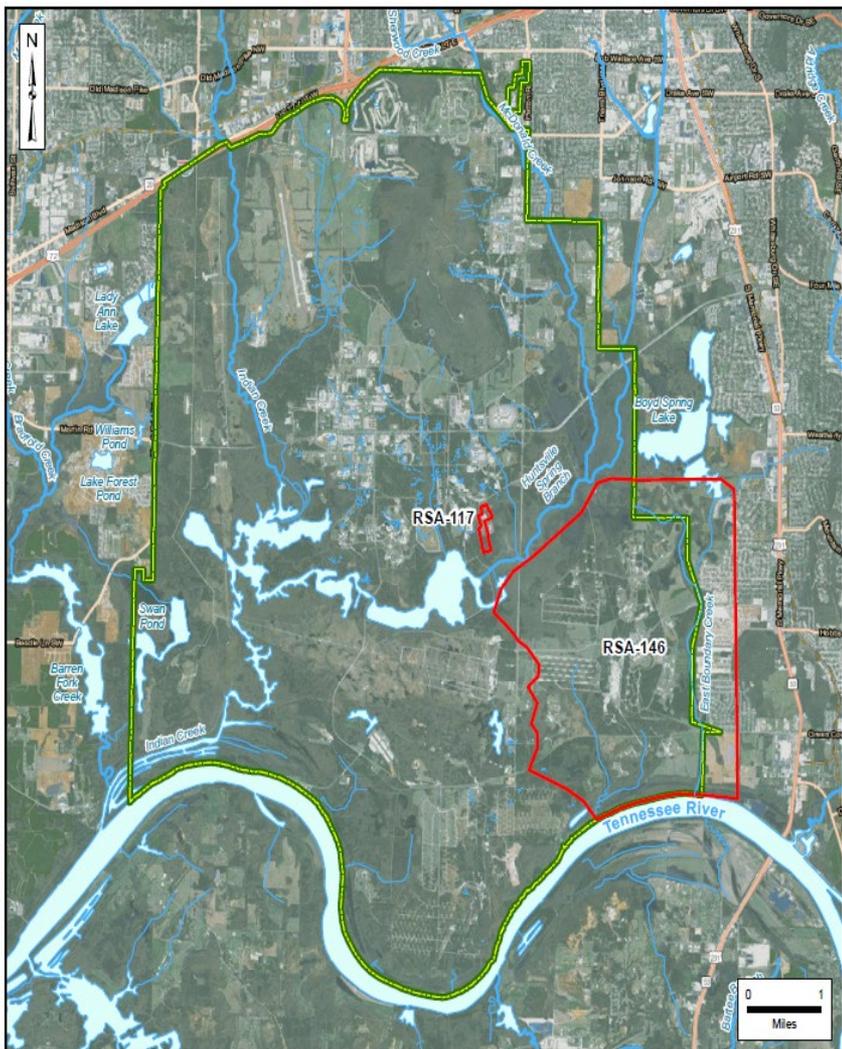
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# RSA-146 Overview

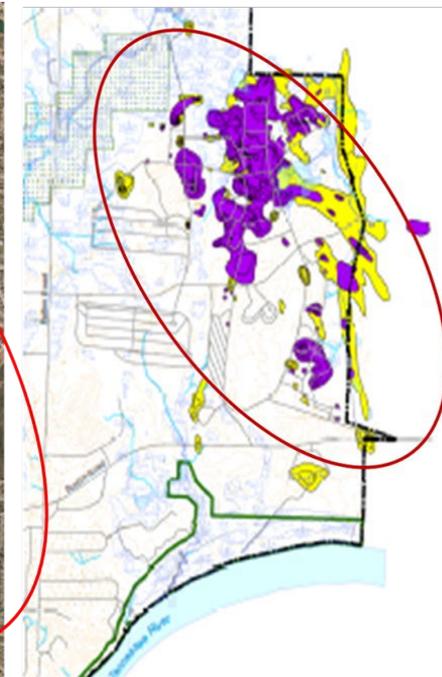
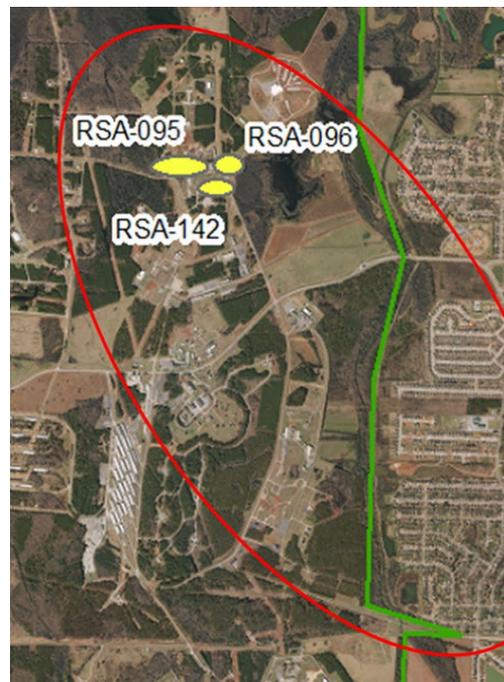


**6,613 Acres (10.3 mi<sup>2</sup>)**

**22 Comingled Plumes**

**~2,000 acre TCE/Perchlorate plume**

**33 active surface sites**



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# Path Forward

- In 2017, the Army and ADEM collaborated on a path forward:
  - Update Conceptual Site Model
  - Develop Scope of Work
    - **Corrective Measures Studies**
    - **Interim Corrective Measures (ICM)**
      - Each site will be broken into ICMs
      - ICMs will be prioritized

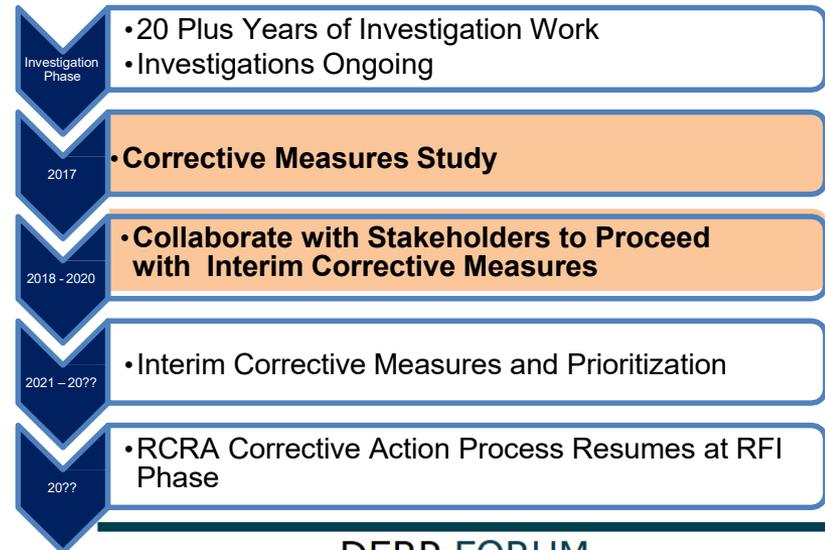


## USEPA:

**Potential corrective measures should be screened against:**

- Protection of human health and the environment
- Attainment of media (groundwater) clean up objectives, and
- Controlling the sources

*Alternatives that do not meet these threshold criteria do not warrant further consideration*



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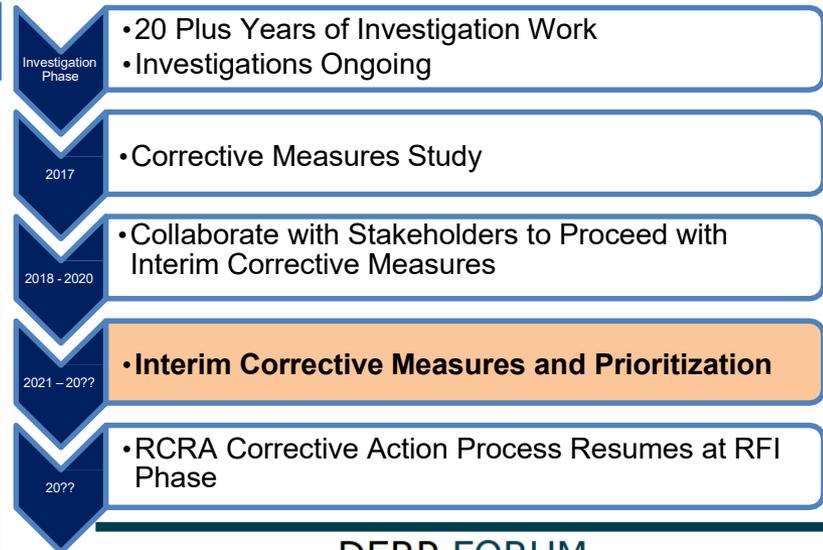
# Identifying/Prioritizing Potential ICMs

- Analyze and prioritize ICMs to address those areas that pose the highest risks to human health or the environment **OR**:
- ...that are causing the greatest level of environmental degradation/ impairment.



## Prioritization Process (idealized)

Ranking Factor		Max. Conc.	Impacted Zones	Areal Extent of Impacts	Number of Apparent Sources	Contribution to Off-Post Impacts	Plume Score (Higher Score Means Higher Priority)	Plume Ranking
Factor Weight		7	5	3	1	10		
P01	P01	4	4	4	4	4	1075200	1
P02	P02a	3	4	4	1	4	201600	2
	P02b	2	3	3	1	4	75600	5
P03 P04 P05	P03	4	3	4	1	3	151200	3
	P04	3	3	4	1	1	37800	7
	P05	2	2	2	1	1	8400	11
P06 P07	P06	3	1	4	1	1	12600	10
	P07	4	2	3	1	1	25200	8
P08 P10	P08	4	3	3	3	1	113400	4
	P10	3	3	2	1	1	18900	9
P09 P11 P12 P13 P14	P09	1	1	1	1	3	3150	16
	P11	1	2	2	1	1	4200	13
	P12	1	2	2	1	1	4200	13
	P13	2	1	1	1	1	2100	19
	P14	1	1	3	1	1	3150	16



# Challenges

- Karst Geology
  - Unmappable pathways between source and discharge
- Extensive Time Line to Complete RFIs
  - Delays Cleanup Actions (source area investigations ongoing)
- Cost to Complete > \$71M (RSA-117) and \$58M (RSA-146)
  - A Single Cleanup Response Would Be Prohibitively Expensive

