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## Aggregate Area Investigation and Remediation Projects

July 25, 2018

Brenda Bowlby  
Aggregate Area  
Project Manager



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# Aggregate Area Overview

- Plateau dissected by major surface drainages or canyons and their tributaries, running roughly west to east or southeast and drain into the Rio Grande.
- Many drainages are large enough to split into subareas
  - Upper, middle, lower
- Aggregate Areas (AA) identified in 2016 Compliance Order on Consent (Consent Order)
  - Generally grouped by drainages (ex: Lower Water Canyon)
  - Further combined into Campaigns (ex: Southern External Boundary Campaign)
  - Milestones and Target Dates
- AA Status
  - Twenty-eight AAs
  - Ten AAs investigated and no further remediation anticipated
  - Several AAs in-progress with partial investigations and some remediation
  - Presenting overview of FY18-20 AA work



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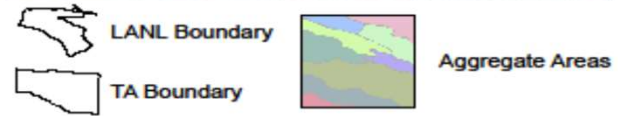
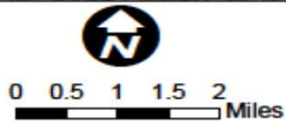
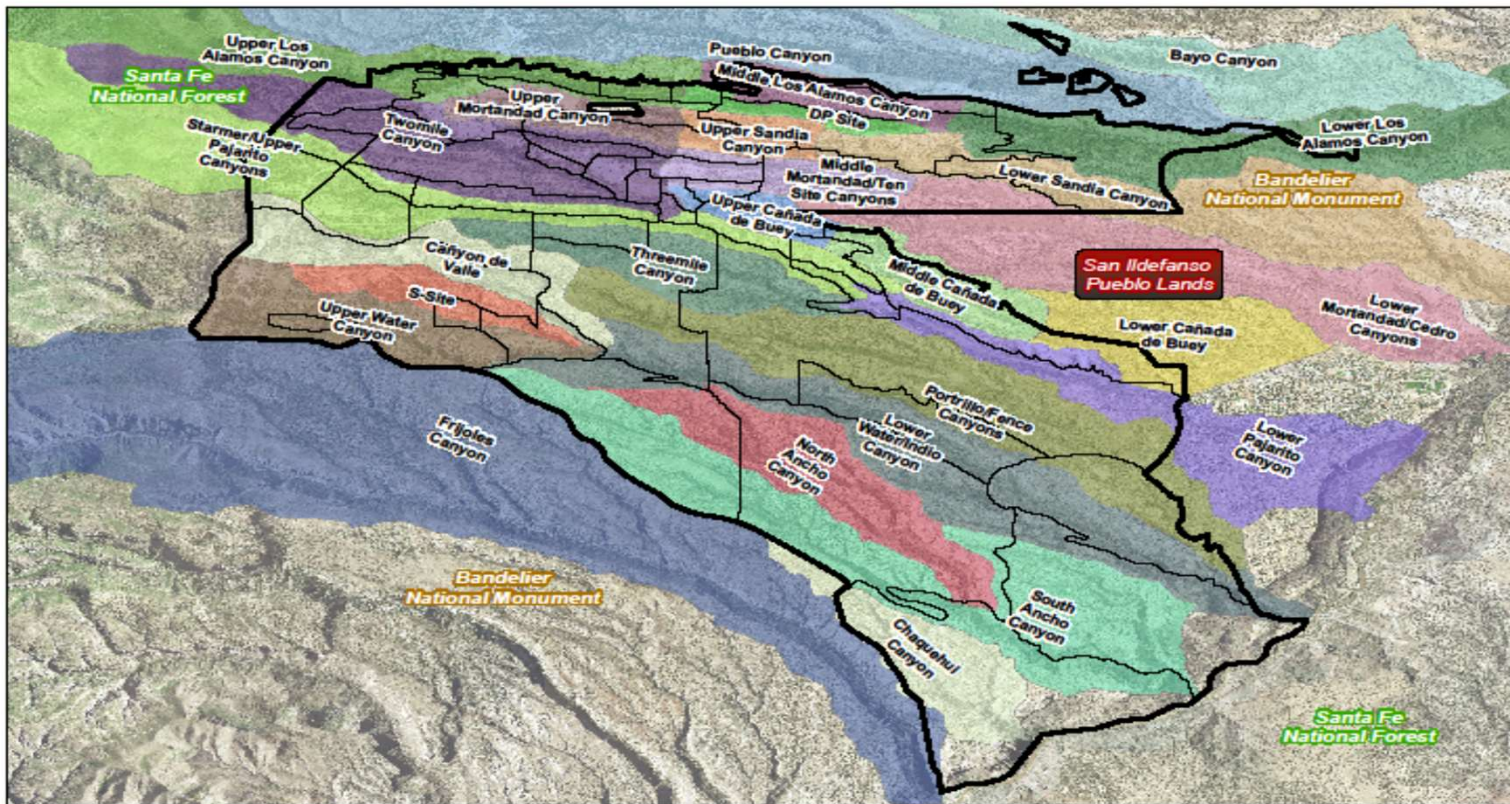




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# Aggregate Area Overview



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# AA Site Investigation and Remediation Process

- Objectives
  - Remediate contaminated areas
  - Obtain Certificate of Completions (CoC) from NMED
  - Remove from RCRA Hazardous Waste Facility Permit, Appendix K
- Investigation Work Plan (IWP)
  - Review site history and historic screening sample data
  - Identify contaminants of potential concern
- Field Investigation Activities
  - Collect soil and tuff samples per the IWP
  - Submit samples to accredited analytical laboratory
  - Review validated data to determine nature and extent of contamination
- Remediation of Sites Above Soil Screening Levels
  - Remediate and obtain additional confirmation samples
- Investigation Report (IR)
  - Summarize investigation and remediation activities and analytical results
  - Provide human health and ecological risk assessments and recommendations
  - **\*\*Two IRs are FY18 Consent Order Milestones due to NMED by 9/28/18:**
    - Middle Los Alamos Canyon AA
    - Upper Los Alamos Canyon AA



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# Past Site Remediation Examples



PCB contaminated soil removal TA-61



Sandia Canyon Wetland Stabilization



North Ancho Remediation



Spider Excavator on Canyon Edge



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# Aggregate Area Work Scope

## FY18-20 Aggregate Area Campaigns and Sites

- Supplemental Investigation Reports Campaign (11 Reports)
- Known Cleanup Sites (Above SSLs) Campaign
- Historical Properties Completion Campaign
  - Remediation of New Solid Waste Management Unit (SWMU) in Middle LA Canyon AA
- Southern External Boundary Campaign
  - South Ancho Canyon AA
  - Chaquehui Canyon AA
  - Lower Water Canyon AA
- Pajarito Watershed Campaign
  - Twomile Canyon AA



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# Aggregate Area Work Scope (cont.)

## Known Cleanup Site Campaign

- Minimal Site Investigation and Material Removal/Remediation
- Located within Various AAs
- SWMUs 46-004(q), 15-008(b), and 15-007(c)

## New SWMU 02-014

- Recently Extracted from other SWMUs to Focus Remediation
- Historical Properties Campaign (Middle Los Alamos AA)
- PCB Contamination
- Late FY18/early FY19



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# Southern External Boundary Campaign

- **Campaign Includes**
  - Includes: South Ancho Canyon, Chaquehui Canyon, Lower Water Canyon AAs
  - North Ancho and Potrillo/Fence Canyon AAs (Phase II)
- **South Ancho Canyon AA**
  - Extensive Site Investigation and Material Removal/Remediation
  - PCBs
  - FY19/20
- **Chaquehui Canyon AA**
  - Extensive Site Investigation and Material Removal/Remediation
  - FY19/20
- **Lower Water Canyon AA**
  - Site Investigation and Material Removal/Remediation
  - Possible High Explosive (HE)
  - FY19/20
- **North Ancho and Potrillo/Fence Canyon AAs**
  - Likely FY20



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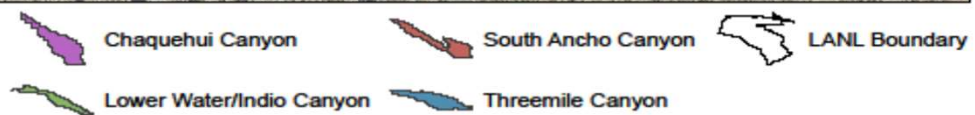
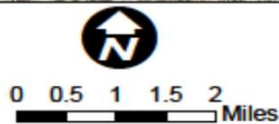
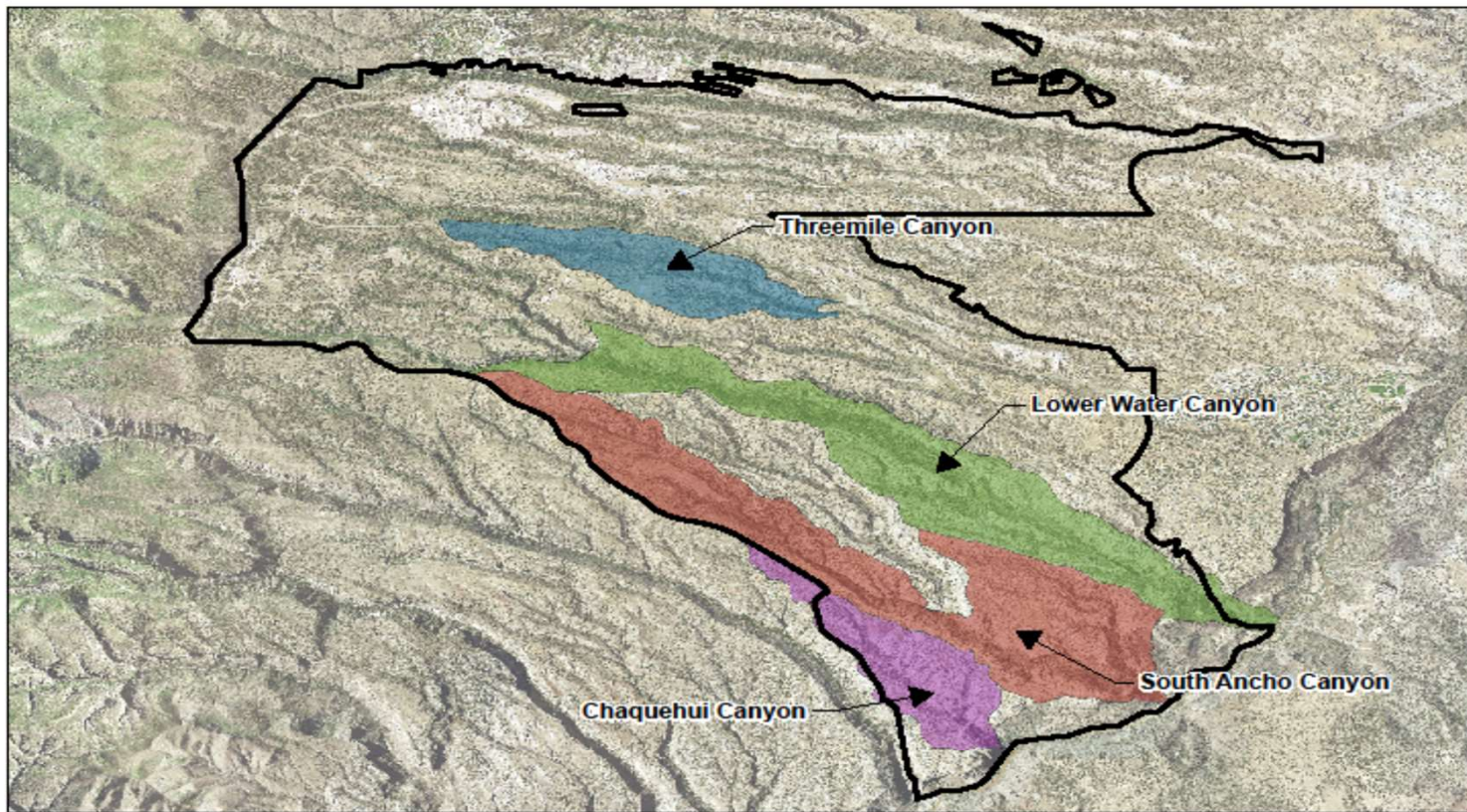




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# Southern External Boundary Campaign Locations



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# South Ancho Canyon AA

- Background
  - Technical area created in 1947 as a test site for weapons experiments using conventional high explosives (HE)
  - Uranium, beryllium and polonium radiation sources plus metals (lead)
  - Experiments performed in underground chambers and surface firing pads
  - Part of Southern External Boundary Campaign
- Implement Investigation Work Plan
  - Investigate approximately 12 SWMUs and Areas of Concern
  - Collect approximately 300 samples



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## South Ancho Canyon AA (cont.)

- Field Investigation and Material Removal
  - Septic tank (inactive, 768 gallons)
  - Beneath leach field and leach field boundary
  - Inactive gun firing site
  - Former transformer site (pre-1950, PCBs, removed)
  - Landfill (debris from firing sites, telephone poles, railroad ties, etc.)
  - Contaminated soil and debris
- Schedule
  - Field work in FY19
  - IR in FY20



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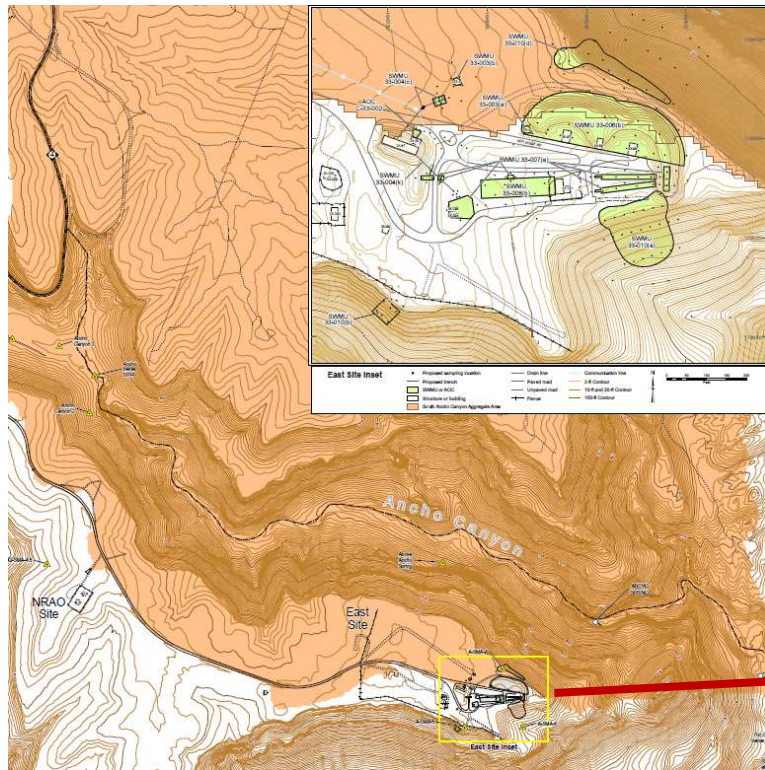
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# South Ancho Canyon AA Overview



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# Chaquehui Canyon AA

- Background
  - Area used for experimental research for innovative detection and energy-projection systems
  - Systems used for remote applications in space and around the world
  - Potential contamination resulting from historic activities
  - Part of Southern External Boundary Campaign
- Implement Investigation Work Plan
  - Investigate 43 SWMUs and Areas of Concern
  - Collect approximately 1300 samples
  - Geophysical surveys will be needed to refine underground disposal site location information



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## Chaquehui Canyon AA (cont.)

- Field Investigation and Material Removal
  - Septic systems & seepage pit
  - Transformer site (pre-1950, PCB, removed)
  - Former firing site and debris
  - Disposal pits and underground chambers
  - Incinerator and concrete pad
  - Surface debris
  - Landfill (waste disposal site)
- Schedule
  - Field work in FY19
  - IR tentatively scheduled for FY20



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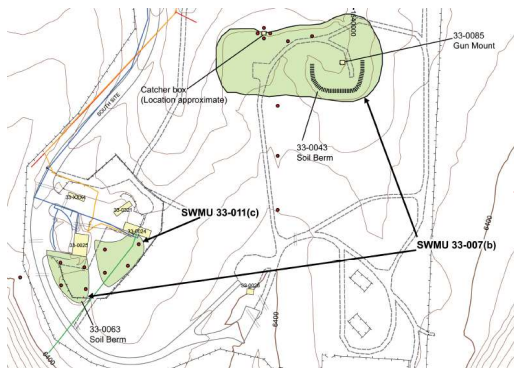
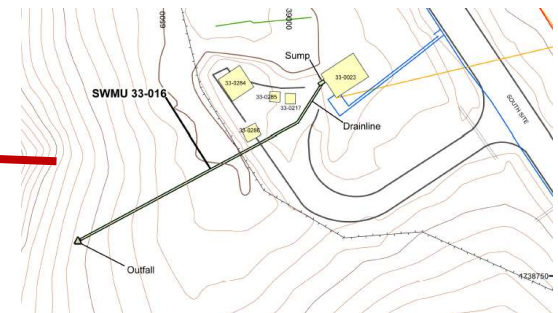
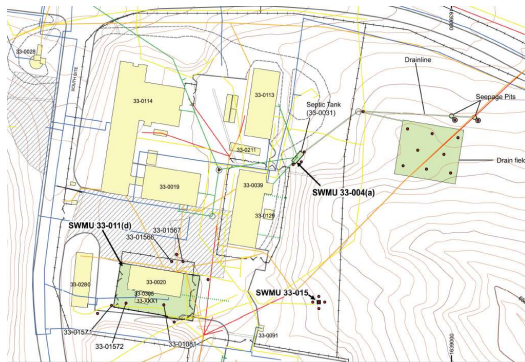
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# Chaquehui Canyon AA Overview



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# Lower Water Canyon AA

- Background
  - Also known as “R-Site”
  - Historically used for high explosive research, development and testing
  - Past use of lead, beryllium, mercury, thorium, uranium-238
  - Part of Southern External Boundary Campaign
- Implement Investigation Work Plan
  - Investigate 6 SWMUs and Areas of Concern
  - Collect approximately 200-300 samples



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## Lower Water Canyon AA (cont.)

- Field Investigation and Material Removal
  - Storage area
    - “Boneyard” -- old storage area with metal scrap remaining
  - Inactive firing site (camera chamber, concrete pad)
  - Septic system drain line
  - Septic tank (4' x 8' x 5' reinforced concrete)
  - Former underground storage tank residual contamination (218 gallon, removed)
- Schedule
  - Field work in FY19
  - IR tentatively scheduled for FY20



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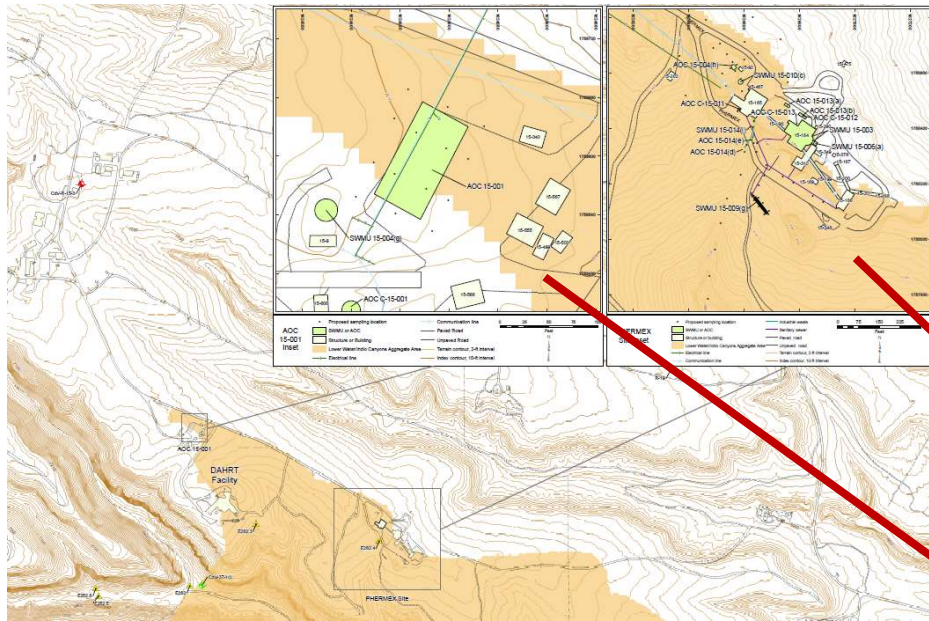
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# Lower Water Canyon AA Overview



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## Known Cleanup Site: SWMU 46-004(q)

- Background
  - Managed Under the Known Cleanup Sites Campaign
  - Consent Order FY19 Target to Complete Remediation and Letter Report
  - Located within Upper Canada del Buey AA
- Field Investigation and Soil Removal
  - Small soil remediation
  - Mercury
- Schedule
  - Remediate late FY18/early FY19
  - Letter report in early FY19
  - IR tentatively scheduled for FY19/20



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# Known Cleanup Site: SWMU 46-004(q)

SWMU 46-004(q)



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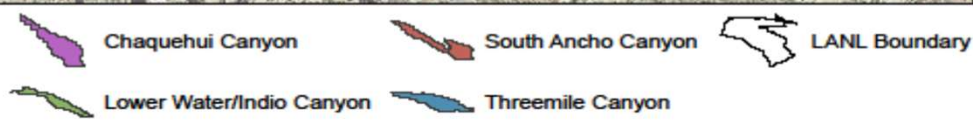
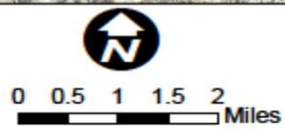
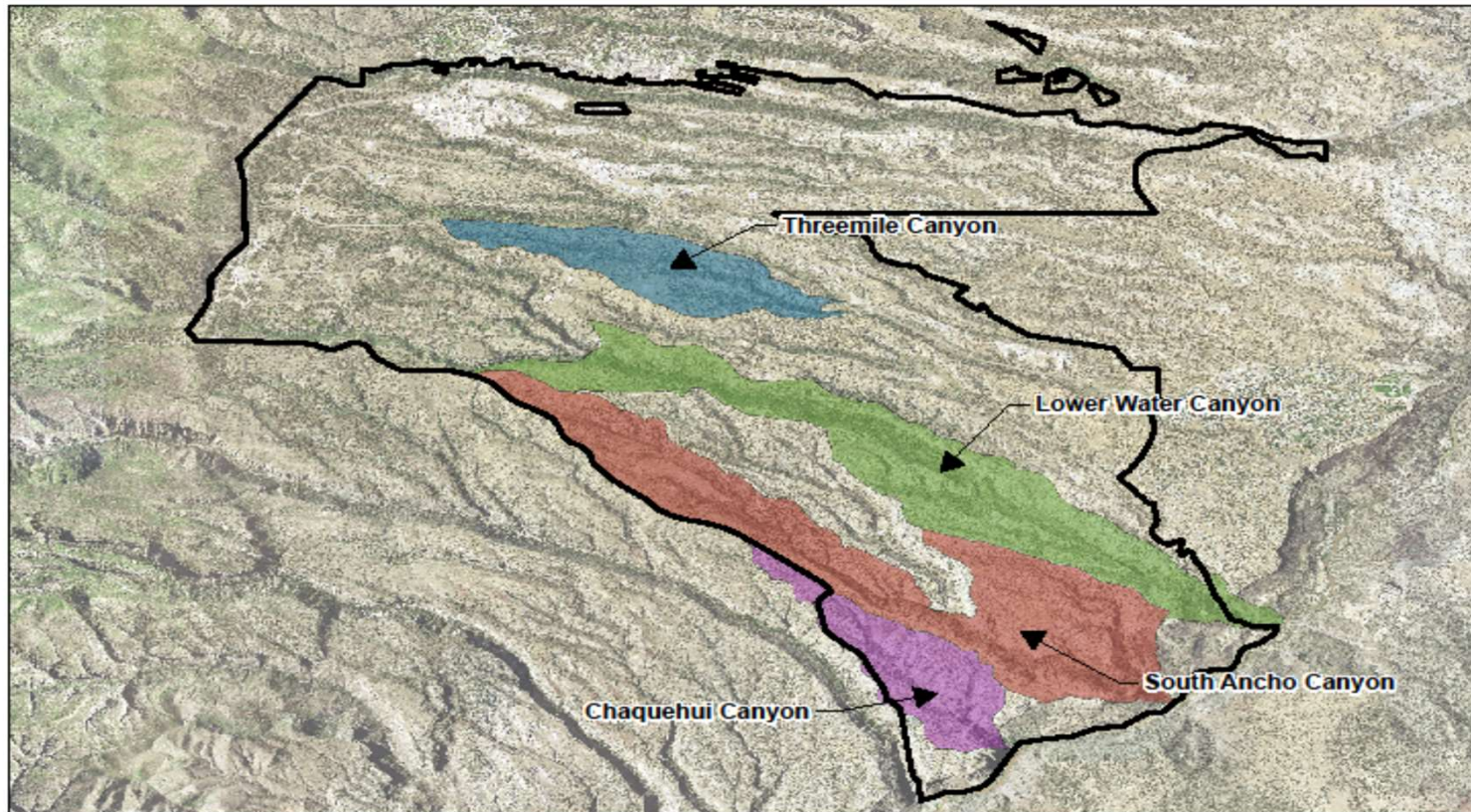
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# Southern External Boundary Campaign Locations



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# Known Cleanup Site: SWMU 15-007(c)

- Background
  - Managed Under the Known Cleanup Site Campaign
  - Consent Order FY19 Target to Complete Cleanup and Letter Report
  - Located within Threemile Canyon AA
  - Underground shaft used for a single underground test of approximately 2 tons of high explosives to determine the ability of tuff to absorb an explosion.
  - Lead shot previously found on the surface.
- Field Investigation and Material Removal
  - Resample two locations at greater depths to determine the vertical extent of lead contamination.
  - Remove contaminated soil.
- Schedule
  - Field work in FY19
  - Letter report in FY19
  - IR tentatively scheduled for FY20



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# SWMU 15-007(c) Shaft Area Overview



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# Known Cleanup Site: SWMU 15-008(b)

- Background
  - Managed Under the Known Cleanup Site Campaign
  - Consent Order Milestone to Complete Cleanup and Letter Report by 9/30/2019
  - Located within Threemile Canyon AA
  - Surface disposal area located north of Firing Site R-44
- Field Investigation and Material Removal
  - Sampling to determine cleanup boundary of lead at approximately 5 locations
  - Remove contaminated soil
- Schedule
  - Field work in FY19
  - Letter report in FY19
  - IR tentatively scheduled for FY20



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# SWMU 15-008(b) Surface Disposal Area Overview



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## New SWMU 02-014

- Background
  - Former location of three, pre-1950 transformers
  - Located within Middle Los Alamos Canyon AA
  - Extracted from other SWMU to focus cleanup
- Field Investigation and Soil Removal
  - Remove approximately 180 cubic yards of soil
  - Remove 1 foot depth across site
  - Remove deeper contamination at four locations (5' to 10' depths)
- Schedule
  - Field work in late FY18/early FY19
  - IR tentatively scheduled for FY19



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# New SWMU 02-014



Omega Site



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Thank you.

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