

# Progress of Sandia Cleanup Operations Presented to Northern NM CAB



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# Public Participation in Environmental Activities at Sandia National Laboratories

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- Sandia Site Specific Advisory Board (SSAB) established in May 1995 by the DOE to receive input regarding the cleanup of nuclear legacy sites
- Public participation transitioned from the SSAB to a Long-Term Stewardship (LTS) Community Working Group in September 2000
  - ❖ Issue specific meetings, focused more on information sharing and providing a forum for less formal dialogue
  - ❖ End states and fieldwork defined; decreased costs, less overhead and resources needed
  - ❖ Participation in meetings open to general public, no application required for membership



# Public Participation in Environmental Activities at Sandia National Laboratories

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- Three LTS Community Working Group Task Groups operated from October 2001- September 2006 with efforts resulting in the provision of input to a Long-Term Stewardship Plan for the site
  - ❖ Management of Long-Term Stewardship
  - ❖ Site and Environmental Monitoring Task Group
  - ❖ Information Management/Institutional Controls Task Group
  
- Currently, the DOE/NNSA Sandia Site Office and Sandia Corporation share information with the public on environmental activities at their semi-annual public meetings and at NEPA-related public meetings



# Overview of Sandia Environmental Restoration (ER) Operations

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- Mission – Identify, Characterize & Remediate sites where hazardous &/or radioactive materials have been released
- Scope:
  - 265 Environmental Restoration sites (ER sites)
  - 3 Groundwater Areas of Concern (GW AOCs)
- Regulated by New Mexico Environment Department (NMED)
- Corrective Action governed by NMED April 2004 Compliance Order on Consent



# Overview of Sandia ER Operations

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- Risk-based cleanup based on industrial land use, and recreational land use scenarios for soil sites; groundwater using residential land use scenario
- Very successful, completely closed 233 of 265 ER sites through the state regulatory process
- Status of remaining 32 ER sites & 3 GW AOCs



# Budget Profile for Cleanup Activities at Sandia

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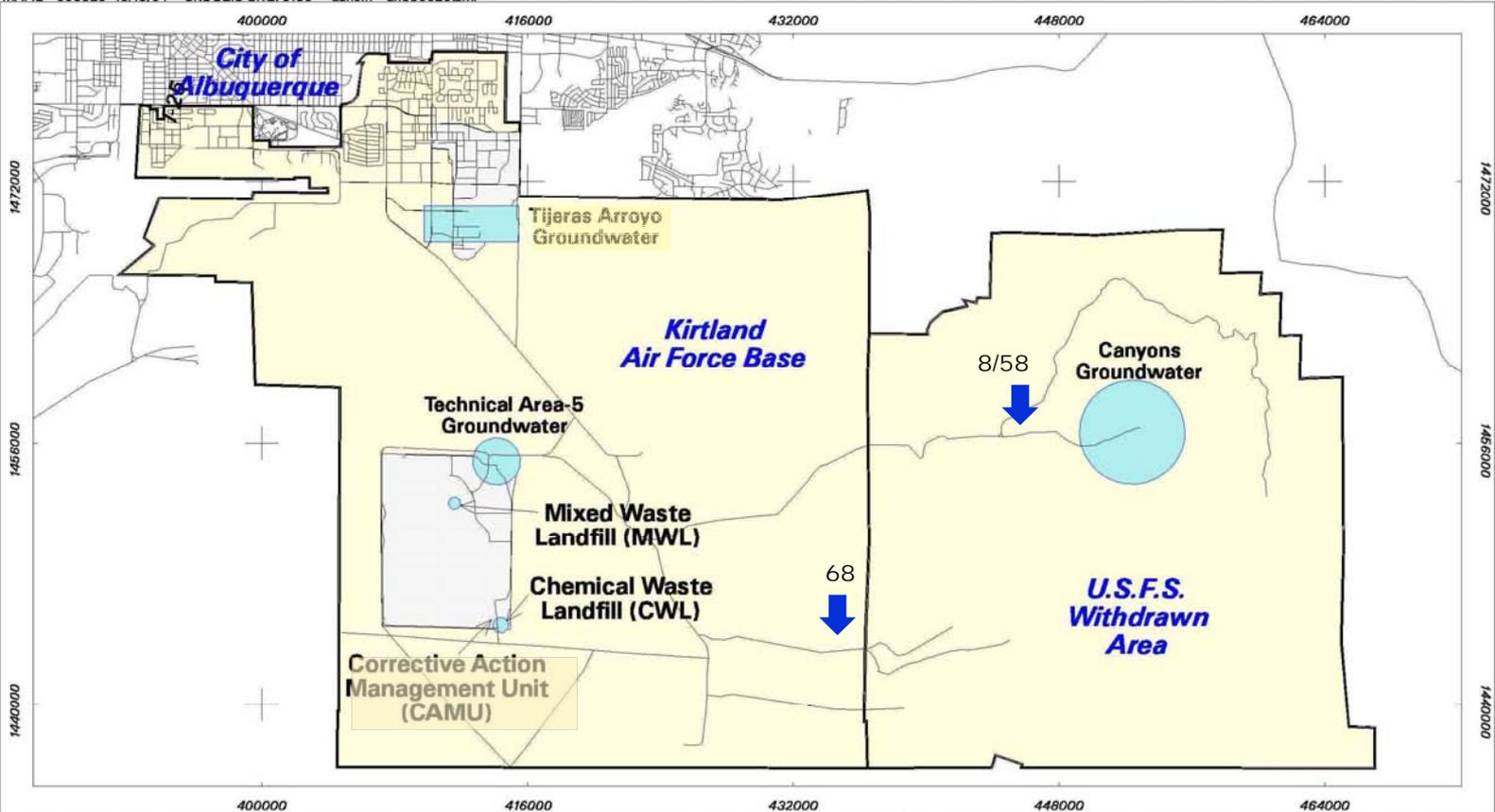
<u><i>Fiscal Year</i></u>	<u><i>Amount (\$M)</i></u>
<b>2012</b>	<b>4.4</b>
<b>2013</b>	<b>5.0</b>
<b>2014</b>	<b>3.9</b>
<b>2015</b>	<b>3.8</b>
<b>2016</b>	<b>2.6</b>
<b>2017</b>	<b>2.9</b>
<b>2018</b>	<b>2.4</b>
<b>2019</b>	<b>1.7</b>
<b>2020</b>	<b>1.5</b>
<b>Total</b>	<b>28.2</b>



## 32 Sites and 3 GW AOCs

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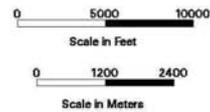
- 32 remaining ER sites
  - Mixed Waste Landfill (RCRA solid waste management unit (SWMU))
  - 26 SWMUs in “Corrective Action Complete” regulatory process
  - 5 SWMUs undergoing groundwater investigations
- 3 GW AOCs (regulated as SWMUs)
  - Burn Site
  - Tijeras Arroyo
  - Technical Area V



### Legend

-  Groundwater Area of Concern
-  Kirtland Air Force Base / U.S.F.S. Withdrawn Area
-  SNL Technical Area
-  Road

Sandia National Laboratories, New Mexico  
Environmental Geographic Information System



**Long Term  
Environmental Stewardship  
Areas of Concern**





# Mixed Waste Landfill - Background

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- 2.6 acre landfill
- Operational 1959 to 1988
- GW monitoring & other field investigations began 1990
- Public Hearing on remedy in 2004
- NMED issued Final Order in 2005: Selecting evapotranspirative cover w/ bio-intrusion barrier as remedy
- Evapotranspirative cover built in 2009

# Mixed Waste Landfill Cover 2011





# Mixed Waste Landfill

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- Corrective Measures Implementation Report approved by NMED (October, 2011)
- Submitted revised Long-Term Monitoring and Maintenance Plan for the cover to NMED (March 2012)
- Plan describes required long-term monitoring of air, soil, biota (animal burrows/soil and vegetation), groundwater, and cover maintenance
- UNM Lobo vault <http://hdl.handle.net/1928/20222>
- Ongoing monitoring of GW



## 5 SWMUs Requiring Groundwater Investigations

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- Background: NMED April 8, 2010 guidance letter:
  - SWMUs 149 & 154 – use existing wells to characterize GW
  - SWMUs 8/58 – install 2 GW characterization wells
  - SWMU 68 – install 3 GW characterization wells

# SWMUs 8/58 Groundwater Investigations

- Two GW monitoring wells installed (August 2011)
  - Depths 85 ft & 115 ft
- Began 8 quarters groundwater analysis (full analysis)
- No contaminants exceeding drinking water standards (elevated fluoride in 1 well)





# SWMU 68 Groundwater Investigations

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- Three GW monitoring wells installed (August 2011)
  - Depths from 160 to 259 feet deep
- Began 8 quarters groundwater analysis (full analysis)
- No contaminants exceeding drinking water standards

# Installing New Monitoring Well SWMU 68



# Burn Site GW AOC





# Burn Site GW AOC

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- NMED approved Corrective Measures Evaluation Work Plan, Burn Site Groundwater (August 2011)
- Submitted Report to NMED: Results of characterization 10 soil borings and 4 new GW monitoring wells (January 2012)
- Ongoing quarterly monitoring of GW
- Existing & new wells show elevated levels of nitrates in GW
- Corrective Measures Evaluation Report due September 9, 2013



# Tijeras Arroyo GW AOC

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# Tijeras Arroyo GW AOC

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- NMED approved Groundwater Investigation Report (February 2010)
- NMED reviewing Corrective Measure Evaluation Report from 2005
- Ongoing monitoring of GW



# Technical Area V GW AOC

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## Technical Area V GW AOC

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- Submitted to NMED Well Installation Report for 4 new monitoring wells and 3 deep vapor wells (June 30, 2011)
- Ongoing quarterly monitoring of GW

# TA-V Installing 10 stainless steel vapor sampling ports in 500 ft deep vapor well





# Summary

## Sandia's ER Project

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- Addressing remaining 32 ER sites & 3 GW AOCs
- MWL: Long-Term Monitoring and Maintenance Plan to NMED, monitoring GW
- 26 SWMUs in “Corrective Action Complete” regulatory process
- SWMU 149 & 154: quarterly monitoring of GW
- SWMUs 8/58: quarterly monitoring of GW
- SWMU 68: quarterly monitoring of GW
- Burn Site GW: Submitted characterization report to NMED for 4 GW wells & 10 soil borings, and quarterly monitoring of GW
- Tijeras Arroyo GW: NMED reviewing Corrective Measure Evaluation Report , monitoring of GW
- Tech Area V GW: NMED reviewing Report, 4 GW wells & 3 deep vapor wells, quarterly monitoring of GW



# Questions & More Information

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- UNM Zimmerman Library  
Lobo Vault SNL/NM collection –  
<http://repository.unm.edu/handle/1928/10963>
- NMED SNL/NM information -  
<http://www.nmenv.state.nm.us/HWB/snlperm.html>
- Sandia National Laboratories Community Involvement:  
284-5200