

# Environmental Management Overview



**Janet Appenzeller-Wing, Acting Asst Manager**  
Environmental Management  
Community Advisory Board Orientation  
April 9, 2008



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# History of Environmental Management

- The U.S. nuclear weapons complex generated waste, pollution, and contamination resulting in contaminated waste, water, soil and structures that will remain radioactive for thousands of years
- In 1989, the U.S. Department of Energy created the Office of Environmental Management to address the environmental legacy of the Cold War
  - Environmental Management is responsible for the cleanup of 114 sites throughout the United States



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# National Environmental Management Program Responsibility

- Environmental Management is responsible for:
  - Safely disposing large volumes of nuclear wastes
  - Safeguarding materials that could be used in nuclear weapons
  - Deactivating and decommissioning contaminated facilities no longer needed to support the Department's mission and remediating extensive surface and groundwater contamination



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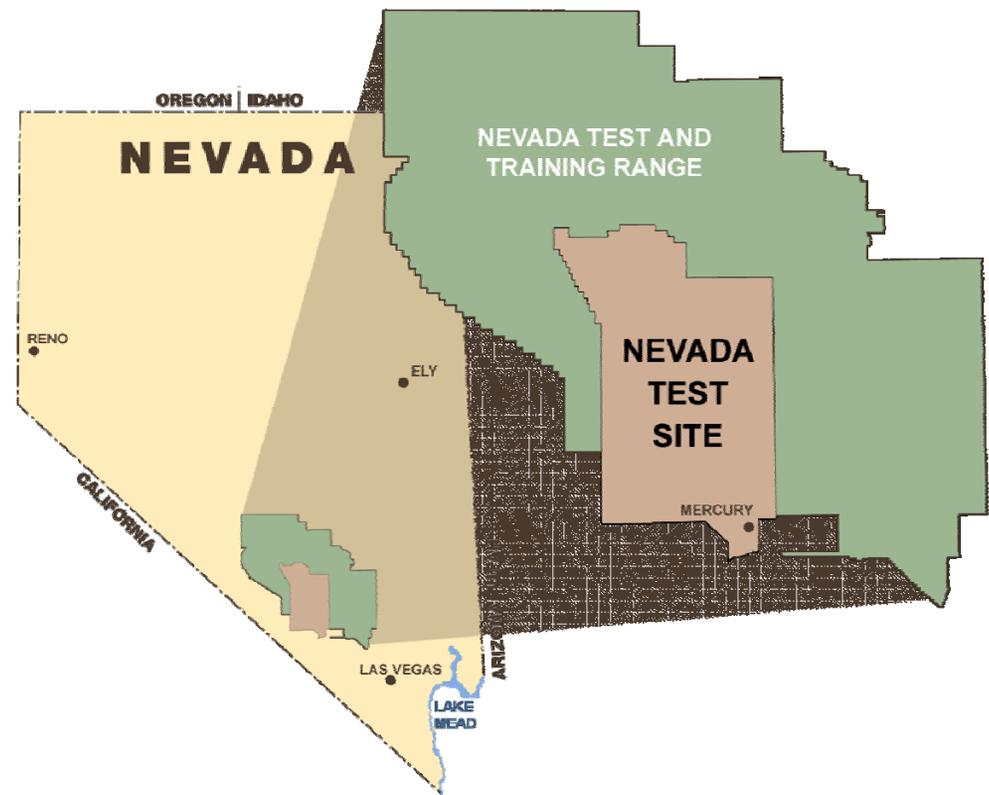
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# The Nevada Test Site

- Approximately 1,375 square miles of federally owned and controlled land – surrounded by approximately 4,500 square miles of federally owned and controlled land
- Located 65 miles northwest of Las Vegas
- Location of 928 nuclear tests



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# Nevada Site Office Missions

- Historical Activities
- National Security
  - Stockpile Stewardship
  - Homeland Security
- Environmental Management



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# Environmental Management Projects

- Environmental Restoration
  - Underground Test Area
  - Industrial Sites
  - Soils



- Waste Management
  - Low-Level Waste
  - Transuranic Waste



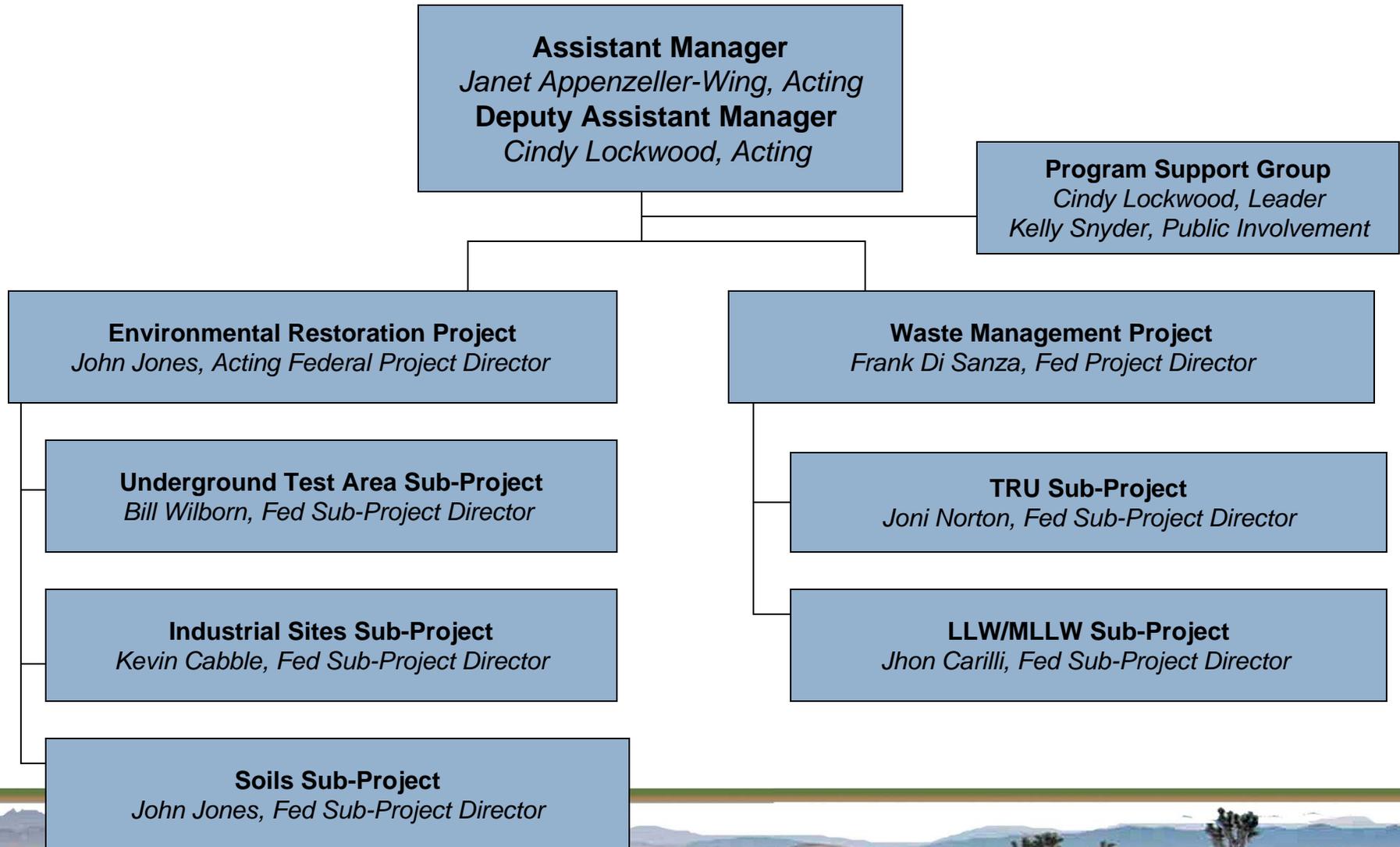
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# Environmental Management Personnel



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# Environmental Management Funding<sup>†</sup>

Fiscal Year	Funding
2004	\$85,882,810*
2005	\$98,212,145*
2006	\$86,056,050*
2007	\$87,153,986*
2008	\$79,706,399**
2009	\$66,839,000**
2010	\$70,259,000**
2011	\$70,365,000**
2012	\$69,759,000**

\*Does not include program direction dollars or disposal fees

\*\* Does not include program direction dollars but includes disposal fees

† FY 2009 – 2012 are baseline numbers

# State of Nevada's Role

- The State of Nevada's Division of Environmental Protection (NDEP) provides programmatic and regulatory oversight of Environmental Restoration and Waste Management activities conducted by the DOE's Environmental Management in the state of Nevada
- Participates as a CAB liaison



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# Key Documents

- Federal Facilities Agreement and Consent Order (FFACO)
- Federal Facility Compliance Act-Consent Order (FFCAAct-CO)
- Mutual Consent Agreement



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# CAB Involvement

- Provide input on budget prioritization
- Host public meetings related to EM sub-projects
- Tour EM sites
- Review and provide recommendations on EM documents
- Receive monthly updates on EM sub-projects



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# Low-Level Waste Sub-Project Overview



**Jhon Carilli, Federal Sub-Project Director**

Low-Level Waste Sub-Project  
Community Advisory Board Orientation  
April 9, 2008



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# What is Low-Level Waste?

- Radioactive waste not classified as high-level waste, transuranic waste, spent fuel, or by-product material
- Typical waste includes metal, debris, soils, clothing, tools, etc.
- Mixed Low-Level Waste (MLLW) contains low-level waste (LLW) *and* hazardous components (i.e. toxic, corrosive, reactive, ignitable or is listed by EPA as a hazardous waste)



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# Why was the Sub-Project Formed?

- Cold War-related activities and nuclear research generated LLW at sites across the country
- U.S. Department of Energy (DOE) is responsible for consolidating and disposing LLW generated by the DOE activities
  - Ensures the safety of the public
  - Allows for the permanent closure of these sites



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# Why was the Sub-Project Formed?

(continued)

- The Nevada Test Site (NTS) was chosen due to its isolated location and arid climate
  - No groundwater pathways out of basins under current climate conditions
  - Deep groundwater (~700 feet – 1,600 feet)
  - Low precipitation (5-7 inches per year)
- Currently, the NTS is the only federal site disposing off-site generated LLW



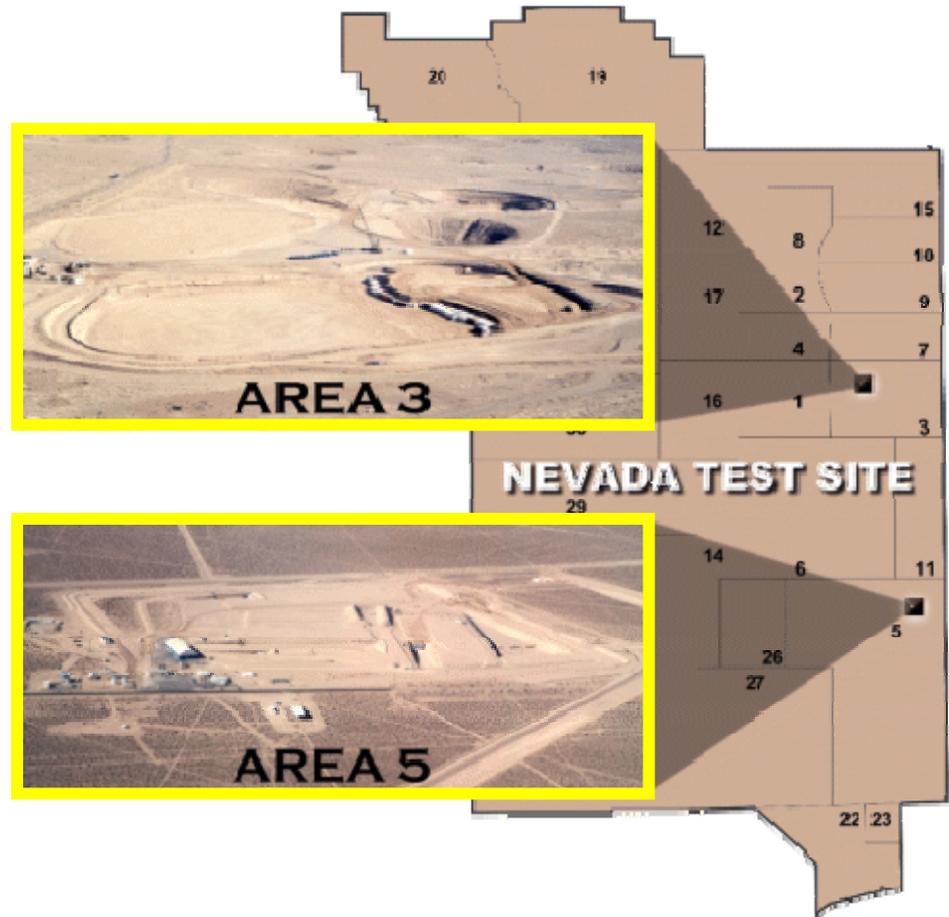
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# Sub-Project Locations

- LLW can be disposed at two disposal sites at the NTS
  - Area 3 uses subsidence craters created by past underground nuclear tests to dispose of bulk and containerized waste
  - Area 5 uses engineered shallow-land burial to dispose containerized waste



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# Sub-Project Locations

(continued)

- Area 3
  - Seven craters, representing five disposal cells
  - Total disposed volume is nearly 19 million cubic feet
  - Currently in cold standby (not active)



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# Sub-Project Locations

(continued)

- Area 5
  - 31 disposal cells
    - 22 operationally closed
    - 9 active
    - 1 for MLLW
  - Total current disposed volume is more than 16 million cubic feet



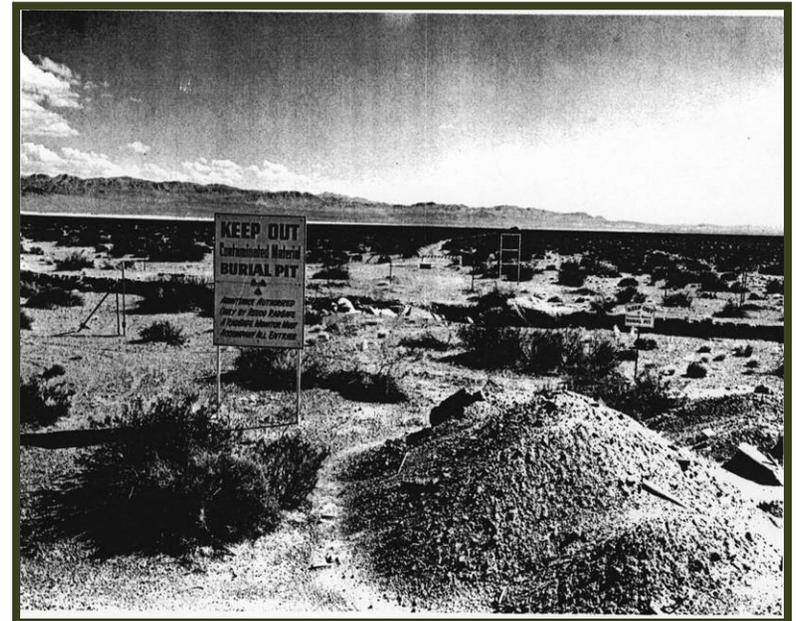
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# Sub-Project Timeline

- 1953 – Disposed waste generated by weapons testing activities in Area 5
- 1968 – Began disposal in Area 3 subsidence craters
- 1976 – Disposed first off-site generated LLW (from Mound Laboratories in Ohio) at the NTS



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# Sub-Project Timeline

(continued)

- December 2005 – NTS received approval from the State of Nevada to dispose off-site generated MLLW through December 2010 or up to 20,000 cubic meters
- 2027 – EM will transfer responsibility of sub-project to the agency responsible for the NTS

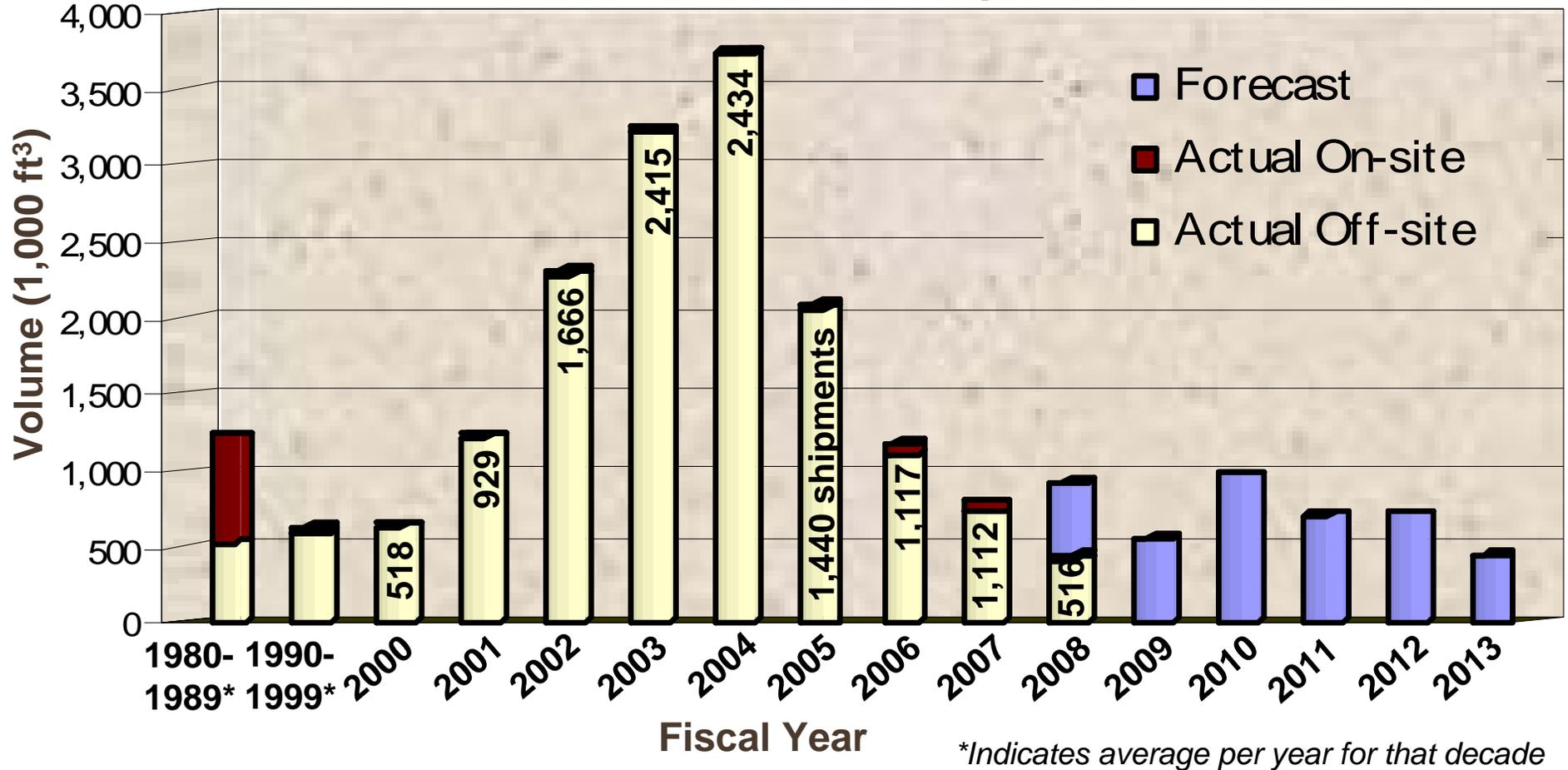


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# NTS Low-Level Waste Disposal Volumes

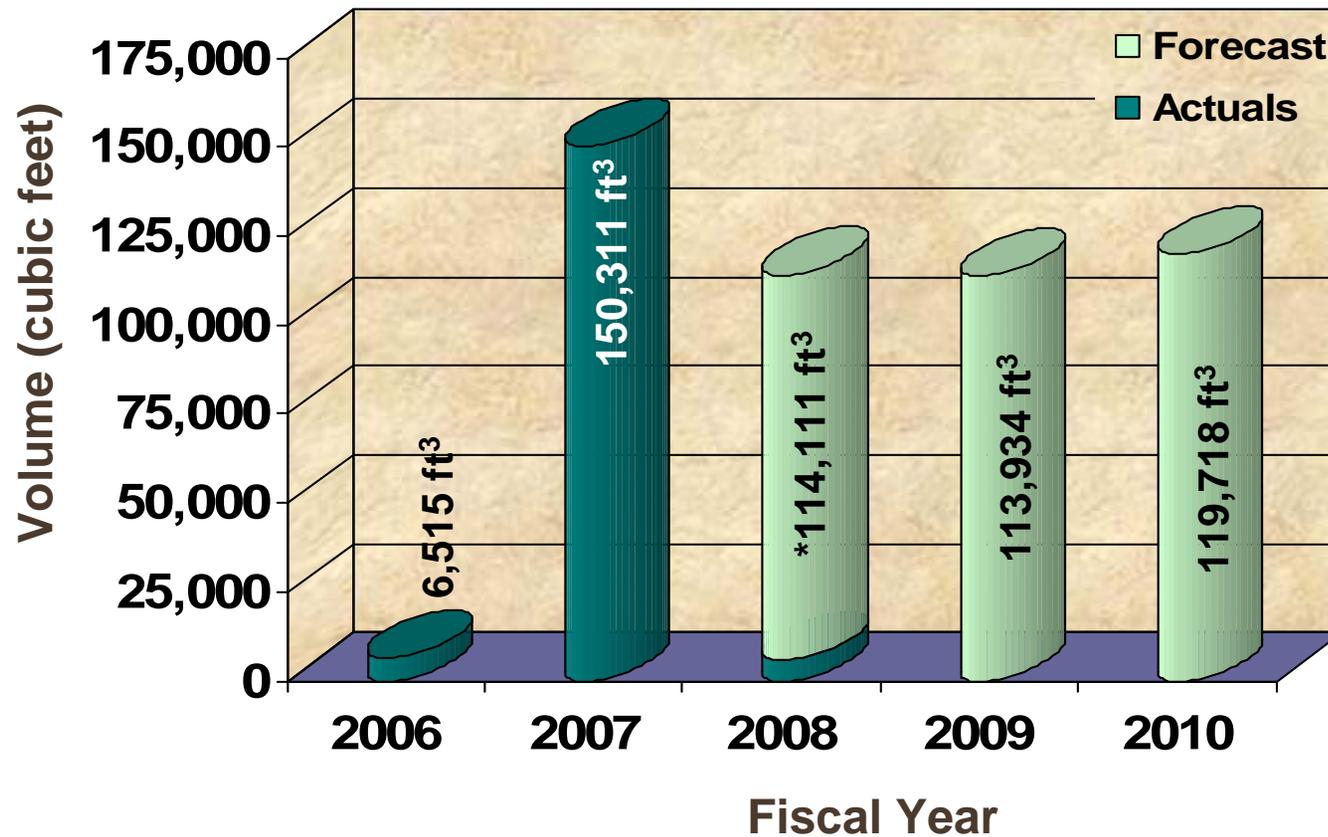


FY 2004 (total) – 3,743,292 ft<sup>3</sup>  
 FY 2005 (total) – 2,089,028 ft<sup>3</sup>  
 FY 2006 (total) – 1,166,435 ft<sup>3</sup>  
 FY 2007 (total) – 793,897 ft<sup>3</sup>  
**FY 2008 (as of 03-30-2008) – 448,220 ft<sup>3</sup>**



EA

# NTS MLLW Volume History



5-year forecasted total is 504,588 ft<sup>3</sup> (14,288 m<sup>3</sup>) – only 71% of the available capacity

\*FY 2008 forecasted volume - actual MLLW volume received as of 02-24-2008 is 5,891 ft<sup>3</sup>



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# LLW and MLLW Sub-Project Funding<sup>†</sup>

Fiscal Year	Funding*
2004	\$5,039,448*
2005	\$5,084,509*
2006	\$3,728,497*
2007	\$4,690,000*
2008	\$20,000,000**
2009	\$21,489,000**
2010	\$21,779,000**
2011	\$23,291,000**
2012	\$21,900,000**

\* Does not include disposal fee

\*\* Includes direct funded disposal fee

† FY 2009 – 2012 are baseline numbers



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# Project Funding

(continued)

- Since 2000, an additional \$0.50 per cubic foot is assessed to the waste generators who ship waste to the NTS to provide assistance for funding for rural emergency response activities in affected counties
  - More than \$8.1M distributed to date



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# DOE Low-Level Waste Grant

Fiscal Year	Clark County	Elko County	Esmeralda County	Lincoln County	Nye County	White Pine County	Total
2000	\$50,500.00	\$50,500.00	\$50,500.00	\$50,500.00	\$50,500.00	\$50,500.00	\$303,000.00
2001	\$10,000.00*	\$37,305.00	\$66,600.00	\$52,014.00	\$92,595.00	\$81,486.00	\$340,000.00
2002**	\$25,000.00	\$199,866.00	\$202,480.00	\$214,101.00	\$203,785.00	\$200,043.00	\$1,045,275.00
2003	\$100,000.00	\$178,061.00	\$190,095.00	\$178,036.00	\$175,906.00	\$177,902.00	\$1,000,000.00
2004	\$100,000.00	\$367,800.00	\$393,754.00	\$389,700.00	\$375,631.00	\$373,115.00	\$2,000,000.00
2005	\$100,000.00	\$400,674.00	\$451,268.00	\$450,000.00	\$448,058.00	\$450,000.00	\$2,300,000.00
2006	\$50,000.00	\$85,000.00	\$91,250.00	\$91,250.00	\$91,250.00	\$91,250.00	\$500,000.00
2007	\$28,261.00	\$95,000.00	\$95,000.00	\$95,000.00	\$91,000.00	\$95,739.00	\$500,000.00
2008	0	0	0	0	0	0	\$139,405.00***
<b>2000-2008 Total</b>	\$463,761.00	\$1,414,206.40	\$1,540,947.00	\$1,520,601.00	\$1,528,725.00	\$1,520,035.40	\$8,117,680.00

\* In 2001 Clark County transferred \$15,000 to Lincoln County for an emergency generator for the hospital in Caliente

\*\* The numbers in this table do not include the \$50,000 provided to Inyo County, California in FY 2002 and \$51,054 in FY 2003

\*\*\* Nevada Division of Emergency Management is using these funds to allow the counties to complete FY 2007 scopes of work



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# Current Activities

## Waste Acceptance Criteria

- Waste disposed at the NTS must meet a rigorous disposal acceptance criteria
  - Waste must be generated at a DOE facility or defense-affiliated site
  - Waste may not contain free liquids
  - All waste must be containerized
    - Examples of containers include 55-gallon steel drums and carbon steel boxes



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# Current Activities

## Transportation

- Shipping of LLW is regulated by the U.S. Department of Transportation – not by DOE
  - The Nevada Site Office (NSO) cannot enforce the use of specific transportation routes



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# Current Activities

## Transportation (continued)

- NTS Waste Acceptance Criteria encourages shippers to travel along “preferred routes”
  - Avoid Las Vegas Spaghetti Bowl and I-215 (Las Vegas Beltway)



Note: The U.S. Department of Interior, Bureau of Reclamation currently prohibits shipments over the Hoover Dam



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# Current Activities

## Monitoring

- Monitoring activities
  - Ensure the safety of workers and the public
  - Provide a measure of performance
- Continuous and ongoing

Monitor (Type)	Number of Locations
Air	4
Groundwater	3
Meteorology	3
Radon	20
Soil Gas	1
Soil Moisture	8
TLD*	16

\* Thermoluminescent Dosimeters



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# Transuranic Waste Sub-Project Overview



**Gary Pyles, Task Manager**  
Community Advisory Board Orientation  
April 9, 2008



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# What is Transuranic (TRU) Waste?

- Transuranic waste (TRU) contains items contaminated by man-made radioactive elements heavier than uranium (atomic number 92) and half-lives greater than 20 years



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# Why was the Sub-Project Formed?

- The NTS was the temporary storage site for legacy TRU waste inventory of 1,650 drums, 58 oversized boxes, and two (2) spheres
  - Examples of items includes gloveboxes, laboratory equipment and protective clothing



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# Background

(continued)

- TRU waste was generated by Lawrence Livermore National Laboratory in California during nuclear weapons research and development activities and decontamination and decommissioning of mainly facilities (1974 – 1990)
  - Lawrence Livermore did not have adequate storage capability to store the waste
- Small quantity of TRU waste was generated by environmental restoration activities on the Nevada Test Site and Tonopah Test Range



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# Background

(continued)

- Legacy TRU waste will be permanently disposed at the Waste Isolation Pilot Plant (WIPP) near Carlsbad, NM
- Some TRU waste in storage is too large to ship to WIPP
- For TRU waste to meet the WIPP Waste Acceptance Criteria (WAC) for shipment and disposal the NTS must:
  - Characterize with processes used to verify TRU waste conforms to the WIPP WAC which includes identifying and removing prohibited items (such as liquids)
  - Size reduction required for some TRU waste packages in order to be transported to WIPP in TRUPACT-II containers



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# Sub-Project Timeline

- 1997 Visual Examination and Repackaging Building (VERB) built
- November 2005 – Completed shipment of 1,860 drums (48 shipments)
- September 2006 – Glovebox removed from the VERB
- Currently - Remaining inventory is 104 drums, 58 oversized boxes and 2 spheres



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# Current Activities

- Making modifications to the VERB to allow for size reduction, segregation, and repackaging of oversized boxes
- Repackaged boxes and remaining drums of TRU waste to be shipped to the Idaho National Laboratory Consolidation Site for certified characterization followed by shipment to WIPP



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# Current Activities

(continued)

- VERB and TRU Pad Cover Building (located in Area 5 on the NTS) to be decontaminated and decommissioned following completion of remaining waste shipments
- Sub-Project to end in FY 2008



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# TRU Sub-Project Funding

Fiscal Year	Funding
2004	\$10,004,859
2005	\$9,086,696
2006	\$6,405,619
2007	\$19,432,878
2008	\$2,452,120



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# Soils Sub-Project Overview



**John Jones, Federal Sub-Project Director**  
Community Advisory Board Orientation  
April 9, 2008



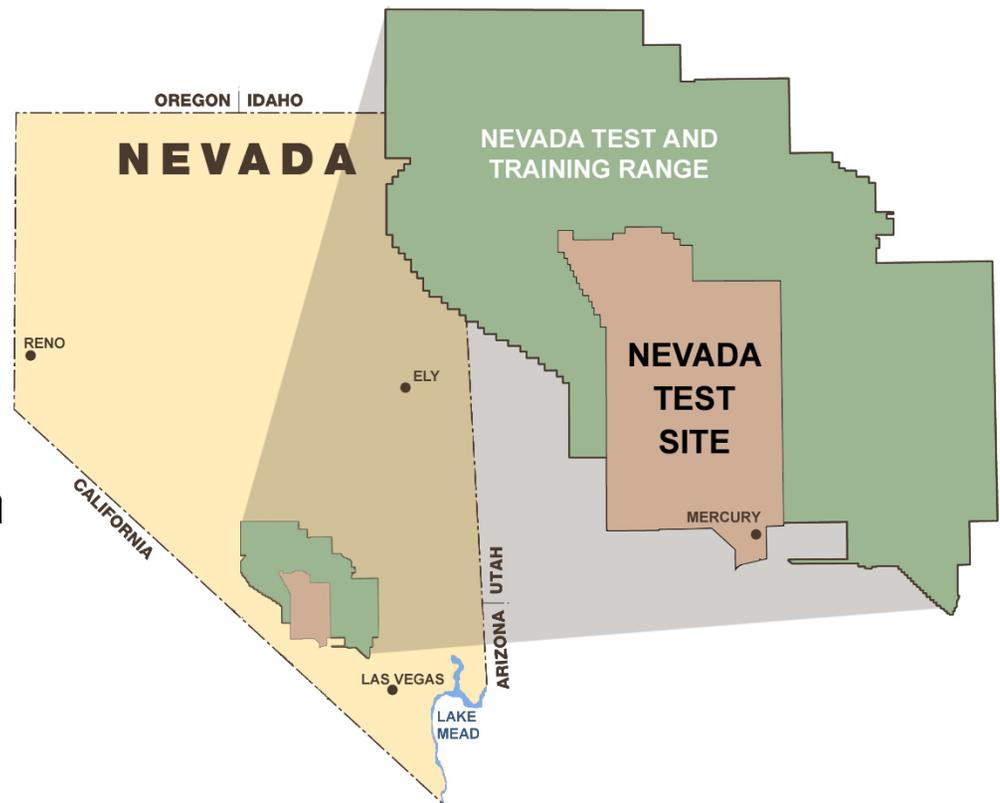
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# Why was the Sub-Project Formed?

- Atmospheric nuclear weapons tests, nuclear safety experiments, and evaluation tests for peaceful uses of nuclear explosives conducted at the Nevada Test Site (NTS) and Nevada Test and Training Range (operated by the U.S. Air Force) resulted in the radioactive contamination of surface soils



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# Background

- The Soils sub-project is responsible for:
  - Characterizing and/or remediating surface soil contamination
    - Characterize means to identify the extent and nature of the contamination present
  - Ensuring appropriate controls (i.e. postings, barriers, etc.) are in place at the sites
  - Conducting long-term monitoring of sites
- State of Nevada oversight provides under the Federal Facility Agreement and Consent Order (FFACO)



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# Sub-Project Terminology

- Corrective Action Site (CAS) - a site that has been identified as needing remediation
- Corrective Action Unit (CAU) - a grouping of CASs that are similar in remediation technique, type of contaminates or proximity to each other

There are 19 CAUs in the Soils sub-project which consist of 107 CASs



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# Sub-Project Timeline

- 1981 to 1986 – Surveyed surface soils to identify the level and location of radioactive contamination
- 1996 1997 – Remediated surface soils at Double Tracks and Clean Slate I
- 1998 – Technology evaluation at Clean Slate II



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# Sub-Project Timeline

(continued)

- 1995 – 2005 – DOE, the Air Force, and NDEP worked together to develop land use scenarios for the TTR sites
  - Reached agreement based on 25 mrem dose
  - Worked with Air Force on acceptable approach for Closure
- 2006 – Ground-based radiological surveys performed for Clean Slate II and III
  - Determined the appropriate radiological contaminant boundary
  - Contaminant area boundary will be posted for Clean Slate II and III in FY 2008
- 2007 – Aerial radiological survey performed (Clean Slate sites and Double Tracks) and gross contaminant migration is not evident



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# Soils Sub-Project Funding <sup>†</sup>

Fiscal Year	Funding
2004	\$1,798,436
2005	\$2,152,080
2006	\$4,565,171
2007	\$2,059,585
2008	\$2,687,000
2009	\$1,495,000
2010	\$6,883,000
2011	\$5,975,000
2012	\$7,765,000

† FY 2009 – 2012 are baseline numbers



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# Current Activities

- Negotiating with U.S. Air Force on corrective action levels addressing soils sites on the Nevada Test and Training Range
- Currently developing two plans for 16 Corrective Action Sites
- Performing a preliminary analysis of the remaining sites



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# Future Activities

- Conduct additional characterization of three CAUs
- Conduct post closure monitoring through compliance surveys
- Complete the soils sub-project in FY 2022



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# Industrial Sites Sub-Project Overview



**Kevin Cable, Federal Sub-Project Director**  
Industrial Sites Sub-Project  
Community Advisory Board Orientation  
April 9, 2008



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# Why was the Sub-Project Formed?

- Portions of the facilities and land at the Nevada Test Site and Tonopah Test Range were used in direct support of nuclear testing
  - Facilities included such things as gas stations, motor pools, worker housing, and research buildings
- Activities resulted in some environmental contamination and subsequent hazardous and radioactive waste generation
- The U.S. Department of Energy Nevada Site Office established the Industrial Sites sub-project to remediate the contaminated sites



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# Background Information

- Industrial Sites may include leach fields, sumps, disposal wells, tanks, contaminated waste piles, ordnance sites, etc.
- Contaminants of Concern may include hazardous chemicals, unexploded ordnance, and low-level radionuclides
- Potential risks are to workers and the environment



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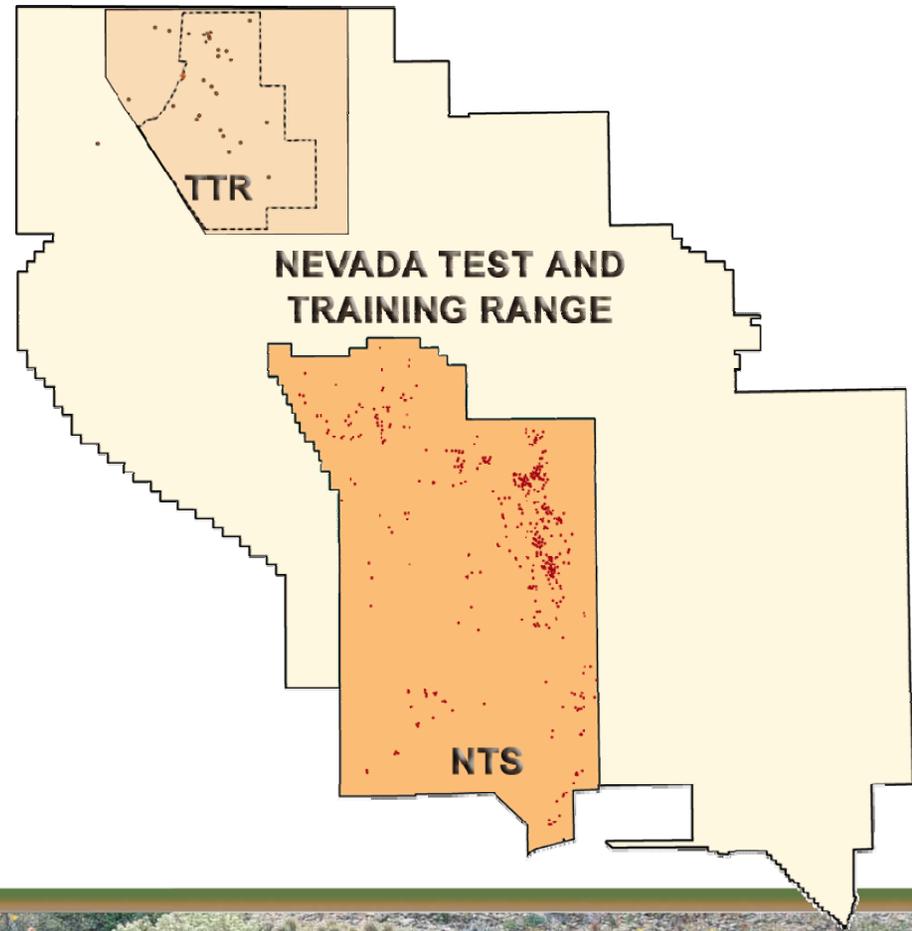
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# Background Information

(continued)

- Tonopah Test Range sites were addressed early (only one site remains to complete)
- NTS sites were remediated in accordance with future land-use planning (63 sites remain)



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# Sub-Project Terminology

- Corrective Action Site (CAS) - a site that has been identified as needing remediation
- Corrective Action Unit (CAU) - a grouping of CASs that are similar in remediation technique, type of contaminants or proximity to each other

There are 198 CAUs in the Industrial Sites sub-project which consist of 1,107 CASs



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# Sub-Project Timeline

- 1989- Industrial Sites Sub-Project was initiated
- 1996- Federal Facilities Agreement and Consent Order (FFACO) is an agreement with the State of Nevada that outlines a series of activities that must be completed before an Industrial Site can be designated as “clean” or “closed in place” with restrictions
- 2012- Industrial Sites Sub-Project scheduled end date



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# Industrial Sites Funding<sup>†</sup>

Fiscal Year	Funding
2004	\$20,021,906
2005	\$25,154,742
2006	\$25,735,639
2007	\$28,555,415
2008	\$20,693,335
2009	\$14,119,000
2010	\$8,726,000
2011	\$5,690,000
2012	\$4,394,000

† FY 2009-2012 are baseline numbers



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# Current Activities

## Steps to Cleanup

- Sites are characterized to determine nature and extent of contamination
- After sites are characterized, specific cleanup or remediation methods are identified



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# Current Activities

## Remediation Methods

- Three remediation methods
  - Housekeeping
  - Complex
  - Streamlined



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# Current Activities

## Remediation Methods (continued)

- Housekeeping
  - Remove debris
  - Dispose of generated waste
  - Verify contamination has been removed



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# Current Activities

## Remediation Methods (continued)

- Complex
  - Greater level of complexity that requires multiple steps
    - Corrective Action Investigation Plan (CAIP)
    - Site Investigation
    - Corrective Action Decision Document (CADD)
    - Corrective Action Plan (CAP)
    - Closure Field Work
    - Closure Report (CR)



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# Current Activities

## Remediation Methods (continued)

- Streamlined Approach for Environmental Restoration (SAFER)
  - Sites with extensive process knowledge and sampling data can combine multiple steps



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# Current Activities

## FY 2008 Assessments and Remediations

CAU No.	CAU Description	Milestone	Deadline	Assessment CASs	Completion CASs
224	Decon Pad and Septic Systems	CR	10/31/07		9
543	Liquid Disposal Units	CR	01/31/08		7
127	Areas 25 and 26 Storage Tanks	CR	02/29/08		12
124	Storage Tanks	(SAFER) CR	02/29/08	5	5
190	Contaminated Waste Sites	CADD/CR	03/17/08	4	4
151	Septic Systems and Discharge Area	CR	04/30/08		8
145	Wells and Storage Holes	CR	06/30/08		6
121	Storage Tanks and Miscellaneous Sites	(SAFER) CR	09/30/08	3	3
545	Dumps, Waste Disposal Sites, and Buried Radioactive Materials	CADD/CR	09/30/08	8	8
234	Mud Pits, Cellars, and Mud Spills	CADD	09/30/08	12	
<b>Total Planned FY 2008</b>				<b>32</b>	<b>62</b>



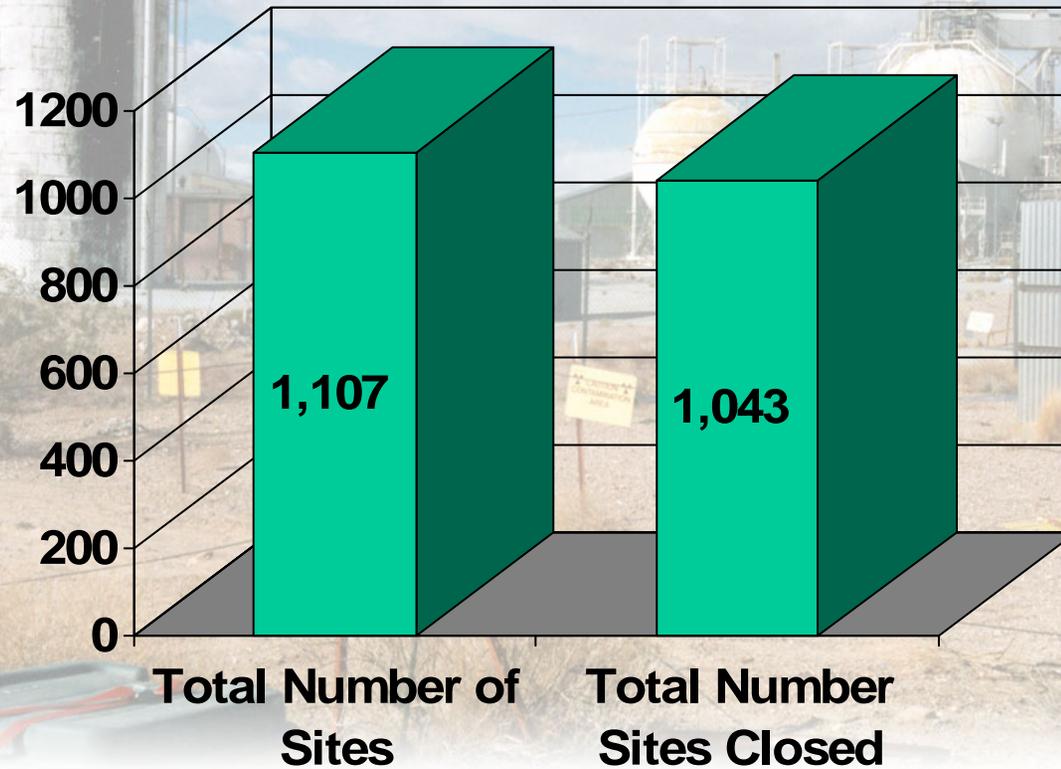
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# Industrial Sites Cleanup



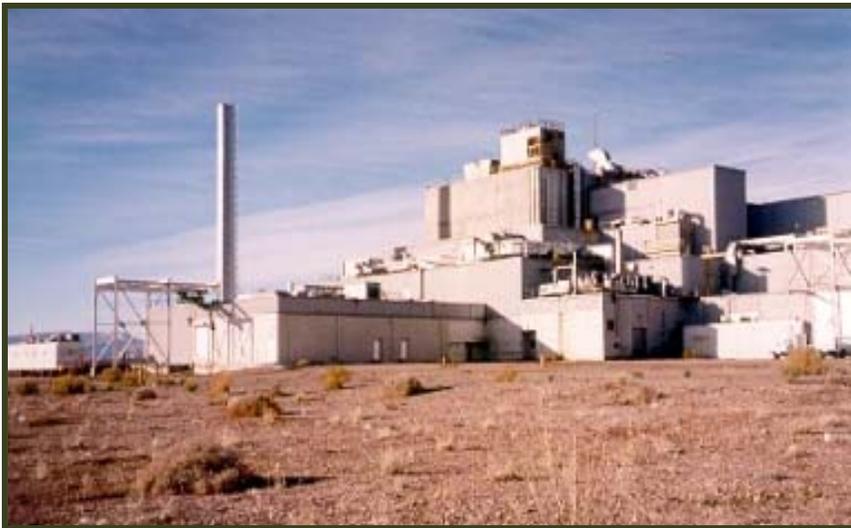
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# Future Activities

- Engine Maintenance Assembly and Disassembly Facility, Area 25



- Pluto Disassembly Facility, Area 26



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# Underground Test Area Sub-Project Overview



**Bill Wilborn, Federal Sub-Project Director**  
Underground Test Area Sub-Project  
Community Advisory Board Orientation  
April 9, 2008



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# Why was the Sub-Project Formed?

- 1951 to 1992: United States government conducted 828 underground nuclear tests at the Nevada Test Site (NTS) at depths ranging from approximately 90 to 4,800 feet below the ground surface
- About one-third of these tests occurred near or below the water table, which resulted in some contamination of the area's groundwater



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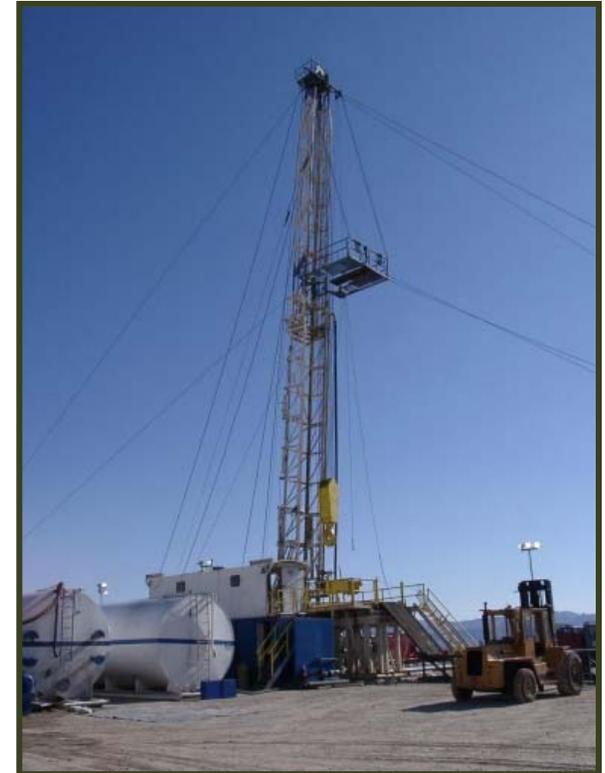
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# Background

- U.S. Department of Energy began preliminary hydrologic research in the 1970s
- A more intensive groundwater studies program was launched in 1989 with the formation of the Groundwater Characterization Project at the Nevada Site Office
  - Now known as the Underground Test Area UGTA Sub-Project



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# Background

(continued)

- The Underground Test Area (UGTA) sub-project evaluates the historic testing impacts on groundwater resources and studies the extent of contaminant migration
- The scope includes collection of multiple sources of field data in order to create a 3-D computer model
  - This model includes groundwater, flow and transport parameters
- The models will be used to help create a long-term monitoring network



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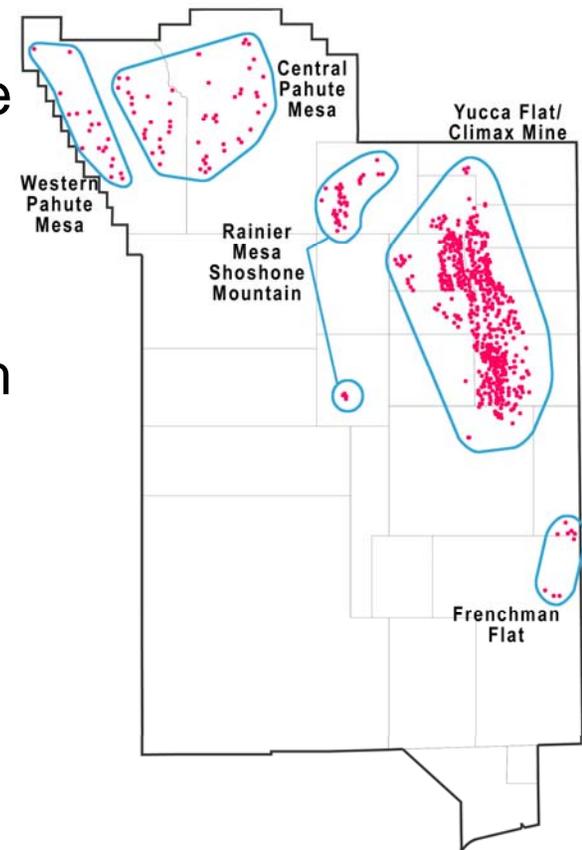
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# Sub-Project Timeline

(continued)

- 1993 - Present
- Formation of the UGTA Sub-Project
- Developed life-cycle baseline
  - Defined five (5) Corrective Action Unit (CAU)
  - Developed UGTA strategy and ensured compliance with the Federal Facility Agreement and Consent Order (FFACO)
  - Completed UGTA strategy peer review
- 2027 Sub-Project currently scheduled for completion



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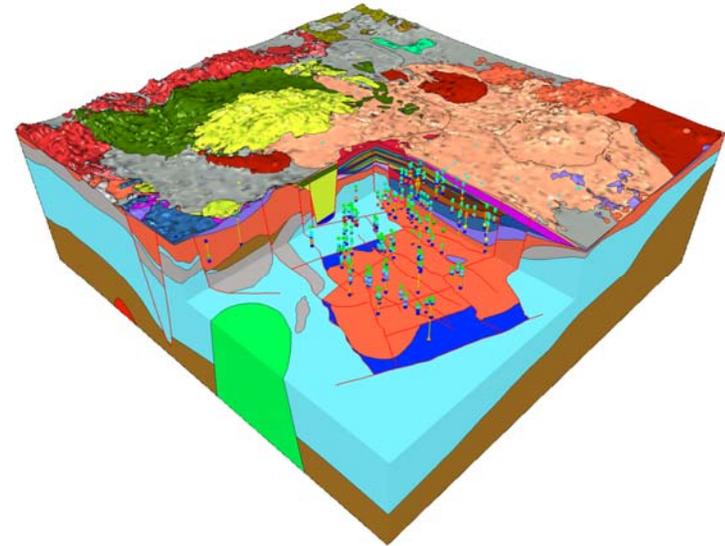
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# Sub-Project Terminology

## Models

- Over the past ten years, scientists have used modeling technology to offer explanations on how groundwater systems behave
- Models are able to integrate various forms of raw data to ultimately produce three-dimensional representations of the subsurface environment



- Data from wells goes into the models and are used to calculate steady state conditions in the model

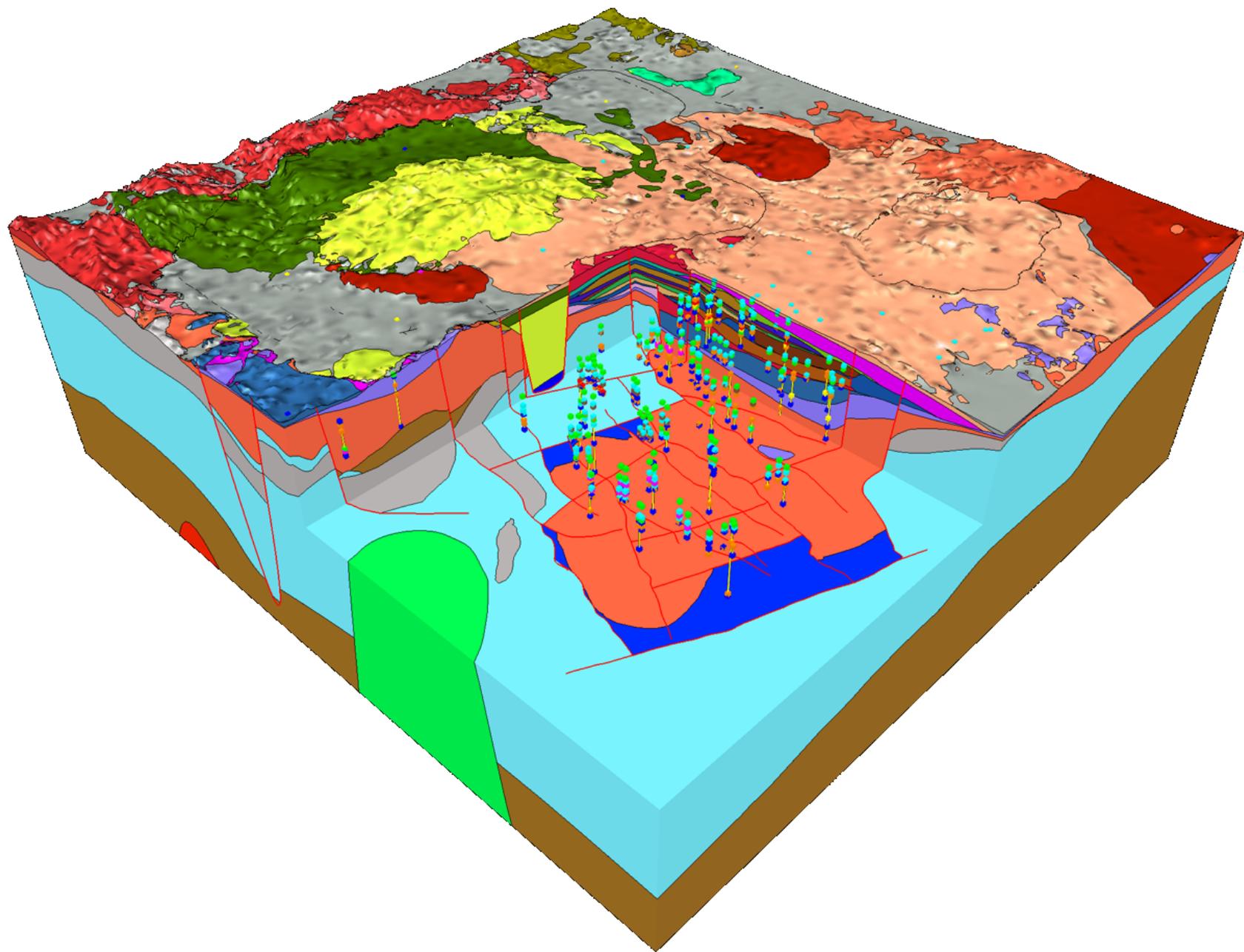


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# Sub-Project Terminology

## Technical Working Group

- UGTA Federal staff continually work with outside organizations to ensure a collaborative approach to understand the nature and extent of groundwater contamination
  - Lawrence Livermore
  - Los Alamos
  - Desert Research Institute
  - United States Geological Survey
  - State of Nevada
  - National Security Technologies, LLC
  - Stoller-Navarro Joint Venture



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# UGTA Sub-Project Funding<sup>†</sup>

Fiscal Year	Funding
2004	\$23,776,554
2005	\$28,420,048
2006	\$20,738,875
2007	\$20,631,913
2008	\$20,961,064
2009	\$29,736,000
2010	\$32,871,000
2011	\$35,409,000
2012	\$35,700,000

† FY 2009 – 2012 are baseline numbers



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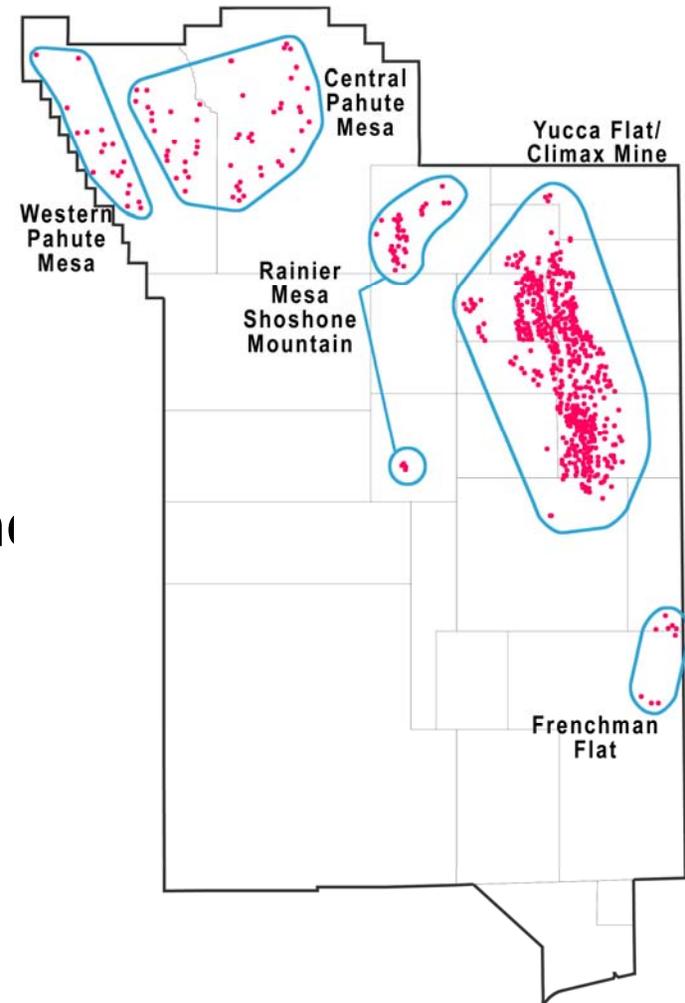
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# Current Activities

- Completed Frenchman Flat Flow Model
- Completed Yucca Flat Geologic Model
- Completed Rainier Mesa/Shoshone Mountain Geologic Model
- Completed the Central/Western Pahute Mesa Flow Model



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# Future Activities

- Complete Central/Western Pahute Mesa Model in beginning FY 2009
- Conduct Frenchman Flat Model External Peer Review in FY 2009
- Initiate drilling in Central/Western Pahute Mesa in FY 2009



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# CAB UGTA Committee Activities

- CAB UGTA committee has been very involved in the progress made in the Central/Western Pahute Mesa modeling
- CAB UGTA committee has defined objectives and selected locations for future drilling locations in Central/Western Pahute Mesa
- CAB members currently attend and participate in the Central and Western Pahute Mesa Corrective Action Investigation Plan (CAIP) working meetings where CAB well-siting recommendations that were made to the Technical Working Group are evaluated



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# Environmental Management (EM) Outreach Initiatives



**Kelly Snyder**  
Deputy Designated Federal Officer  
Community Advisory Board Orientation  
April 9, 2008



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# Environmental Management (EM) Outreach Initiatives

- Utilizes a variety of outreach techniques to inform and involve stakeholders in EM activities through written, oral and visual methods
  - Community Advisory Board (CAB)
  - Operation Clean Desert
  - Fact Sheets
  - Displays
  - Website
  - UNLV Questionnaire
  - EM News Flash
  - Public Reading Rooms / Electronic Mailing List



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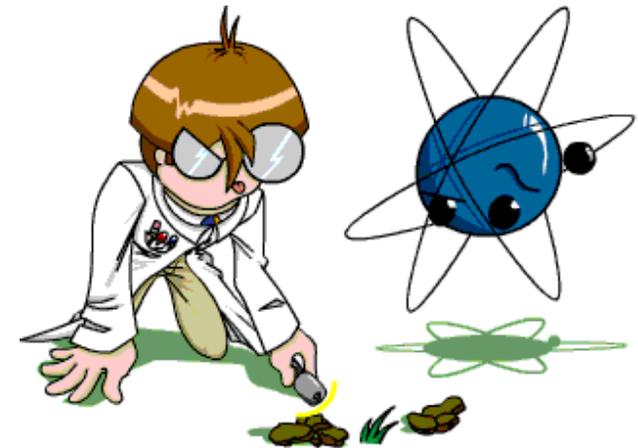
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# Operation Clean Desert

- Program used to teach elementary-age children about the EM program
- Concept created by the EM Student Forum
  - Grant funded from 2001-2006
- Public outreach tools include:
  - Display
  - Activity Book
  - Interactive Computer Game



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# Interactive Kid's Display

- White Pine County Fair
- Pahrump Harvest Festival
- Clark County Fair
- Boy Scout and Girl Scout troops
- Andre Agassi Boys & Girls Club
- Las Vegas and Pahrump elementary schools
- Lied Discovery Children's Museum (Las Vegas)
- Las Vegas Natural History Museum



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# Kid's Activity Book and Computer Game

- Take-away educational tools that gives children the opportunity to continue the educational process away from the display
- More than 4,600 activity books and 1,100 computer games distributed



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# Fact Sheets

- More than 20 fact sheets available covering Waste Management, Environmental Restoration and related activities
  - Available at libraries (Amargosa, Beatty, Pahrump, and White Pine County) Yucca Mountain Information Center (Goldfield), Central Nevada Museum (Tonopah), DOE Public Reading Room (Las Vegas), DOE facilities and website



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# Displays

- Pahrump Library
- Caliente Library
- Beatty Library
- Amargosa Library
- Esmeralda County Repository Oversight Office
- Central Nevada Museum (Tonopah)
- White Pine County Library (Ely)

## Low-Level Radioactive Waste Transportation to the Nevada Test Site

The U. S. Department of Energy National Nuclear Security Administration Nevada Site Office disposes low-level radioactive waste at the Nevada Test Site from approved U.S. Department of Energy and U.S. Department of Defense generator sites across the United States. The transportation and disposal of this waste at the Nevada Test Site is conducted in a safe and efficient manner. The Nevada Site Office works diligently to provide transportation information to the community in order to maintain open lines of communication with the public.

**What is low-level waste?**  
Low-level radioactive waste consists of items such as construction debris, tank, soil, and equipment. Low-level waste is radioactive waste that is not categorized as high-level waste, transuranic waste, spent nuclear fuel, or by-product material.

**How are low-level waste shipments identified?**  
Many different types of radioactive shipments require the "RADIOACTIVE 7" placard as determined by U.S. Department of Transportation regulations. Most low-level waste shipments to the Nevada Test Site are required to display this placard. Some shipments are below U.S. Department of Transportation regulatory limits and do not require a placard.

**How is low-level waste shipped?**  
Low-level waste is shipped in a variety of containers unless meet U.S. Department of Transportation specifications. These containers are loaded on different types of truck trailers to accommodate size. A variety of waste containers are accepted at the Nevada Test Site such as drums, boxes, or large single containers.

**How are routes selected and communicated?**  
U.S. Department of Transportation regulations give carriers (i.e. trucking companies) the responsibility to select routes.  
Approved waste generators can "target" their carriers to use or avoid specific routes.  
Routing preferences are coordinated with state of Nevada officials to avoid heavily populated areas in the State.  
Routing information is communicated to local communities through the Transportation Working Group comprised of interested state and local governments.  
Quarterly transportation routing reports are provided to congressional delegates, state of Nevada agencies, and the public via the Nevada Site Office website ([www.nvdoe.gov](http://www.nvdoe.gov)).  
Carrier routes are monitored through the use of mandatory driver routing surveys.  
\* The Nevada Site Office may consider suspension of a generator's shipments if waste is transported through sensitive areas.

**What is the Emergency Management Grant Program?**  
An Emergency Management grant program was instituted in fiscal year 2008 to provide funding for enhancing county emergency response capabilities in those areas through which low-level waste shipments travel en route to the Nevada Test Site. To fund this grant, approved waste generators are charged an additional \$30 per cubic foot of low-level waste disposed.  
The Nevada Division of Emergency Management administers the funding, which is reimbursed and distributed according to applications submitted by the counties. Nearly \$5 million dollars total has been provided to Clark, Esmeralda, Lincoln, Nye, and White Pine counties for emergency communications and response equipment, facilities, and salaries for emergency managers and training officers.

For additional information on this and other Nevada Site Office programs, visit <http://www.nvdoe.gov>

## RADIOACTIVE WASTE DISPOSAL AT THE NEVADA TEST SITE In Historical Perspective

	1950s	1960s	1970s	1980s	1990s	2000s
<b>ACTIVITIES AT THE NEVADA TEST SITE (NTS)</b>	First atmospheric nuclear test conducted (1951)	Limited Test Ban Treaty drives nuclear testing underground	U.S. and U.S.S.R. sign treaties limiting nuclear tests to less than 150 kilotons (1974 and 1976)	U.S. and U.S.S.R. perform first joint verification of underground nuclear test yield (1988)	Moratorium on nuclear testing begins (1992) and Stockpile Stewardship Program begins (1994)	Expansion of Stockpile Stewardship experiments and National Center for Combating Terrorism established.
<b>WASTE MANAGEMENT-RELATED ACTIVITIES</b>	Nuclear test activities generate radioactive-contaminated waste. NTS consolidates contaminated waste in fenced areas.	First waste trench (Sugar Bunker) excavated in Area 5. Area 5 Sugar Bunker trench becomes major LLW disposal location. First NTS waste disposed in Area 3 subsidence crater. Cleanup begins of atmospheric testing areas.	Cleanup begins on tunnel testing areas. NTS establishes official waste management program. NTS disposes LLW from other DOE and DoD facilities (Non-NTS generators).	Contaminated waste is disposed in deep boreholes. NTS begins disposing (LLW with hazardous components). Waste collected in fenced areas (from 1950s) is disposed in Area 5.	State of Nevada prohibits the disposal of Mixed LLW generated outside of the state of Nevada. NTS and State of Nevada enter into LLW Joint Oversight Agreement for NTS disposal facilities. NTS begins disposing radioactive-contaminated asbestos.	DOE identifies NTS as one of two regional disposal sites for LLW and Mixed LLW. DOE nuclear weapons-related facilities are required to accelerate cleanup of their sites. Accelerated cleanup activities more than triples the amount of waste disposed at the NTS.
<b>NTS ACCEPTS WASTE FROM:</b>	NTS Only	NTS Only	NTS plus 4 Non-NTS generators	NTS plus 14 Non-NTS generators	NTS plus 13 Non-NTS generators	NTS plus 27 Non-NTS generators
<b># of WASTE SHIPMENTS accepted for disposal at the NTS</b>	Waste consolidated (no disposal)	NTS - 1,277	NTS - 1,804 Non-NTS - 258	NTS - 1,228 Non-NTS - 5,132	NTS - 495 Non-NTS - 5,395	NTS - 150 Non-NTS - 8,310 (through 2004)

U.S. Department of Energy National Nuclear Security Administration Nevada Site Office  
For more information, visit <http://www.nvdoe.gov>

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# EM News Flash

- Published on an as-needed basis
- Distributed to mailing list, employees and media

April 3, 2008



## Underground Test Area Sub-Project Plays Host to United Kingdom Scientists

During the week of March 17, two scientists from the United Kingdom traveled across eight time zones and through the Nevada desert to meet with U.S. Department of Energy staff at the Nevada Test Site (NTS) to better understand the groundwater modeling process that is currently utilized at the site by the Underground Test Area (UGTA) Sub-Project. This meeting provided a unique opportunity for the United States and England to learn from each other on how to address the problem of radioactively contaminated groundwater.

During the three-day visit, Dr. Ian Teasdale and Dr. Kate Cooper from the Sellafield Limited Site, which is located on the coast of the Irish Sea in Cumbria, England, were provided a tour of some of the UGTA sites on the NTS and discussed with UGTA Sub-Project personnel the similarities and differences between the NTS and Sellafield. The scientists also discussed the environmental concerns anticipated from regulators and the public as the Sellafield Limited Site groundwater characterization activities progress.

Technologies and software applications similar to those in use by the UGTA Sub-Project to determine the movement of groundwater contamination resulting from historic underground nuclear testing on the NTS are required for the groundwater modeling activities for the Sellafield Limited Site. The visiting scientists were also seeking to become more familiar with the recent database management advances engaged by the UGTA Sub-Project, as similar practices may be useful for handling extremely large data sets for Sellafield.

Drs. Teasdale and Cooper are involved in the remediation of groundwater contamination and the associated database management for the Sellafield Limited Site, a nuclear reprocessing and waste storage facility encompassing approximately 4 square kilometers on the west coast of Great Britain. The Sellafield Limited Site has been instrumental in the United Kingdom's nuclear industry for more than 50 years. Currently, a wide range of decommissioning and clean-up activities are underway at Sellafield.

### Did You Know?

Sellafield was home to Calder Hall, the world's first commercial nuclear power station. Calder Hall was officially opened by Queen Elizabeth II in 1956, and ceased operations in 2003.

You have received this announcement as a member of the U.S. Department of Energy National Nuclear Security Administration Nevada Site Office Environmental Management distribution list. If you would like to be removed from the list, please call 702-295-3521 or e-mail your request to [envmtg@nv.doe.gov](mailto:envmtg@nv.doe.gov)



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# UNLV Community Query

- Grant provided to UNLV to conduct query
- Purpose is to determine communities perception on Environmental Management activities
- Results expected in FY 2008



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# Other Outreach Mechanisms

- Websites
  - DOE – [www.nv.doe.gov](http://www.nv.doe.gov)
  - CAB – [www.ntscab.com](http://www.ntscab.com)
- Electronic Mailing List
  - Used to distribute meeting notices, press releases, etc.
  - More than 270 people and businesses
- Public Reading Room
  - Nuclear Testing Archive, 755 E. Flamingo in Las Vegas
  - Nevada State Library and Archives, 100 Stewart St in Carson City



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# What is the EM Site-Specific Advisory Board? (SSAB)

- Group of volunteers convened by the U.S. Department of Energy's (DOE's) Environmental Management (EM) Program to provide citizen review and feedback to DOE's EM activities throughout the country
- Largest Federally chartered advisory board in the country
- Made up of seven boards including the Community Advisory Board (CAB) for Nevada Test Site Programs



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# Why / How Was the SSAB Formed?

- National EM program formed in 1989
  - Assess / address conditions at 16 major facilities known as the “nuclear weapons complex” (2.3 million acres of land and 120 million square feet of buildings)
  - Identified major challenges that would require comprehensive communication program with communities surrounding sites



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# Why / How Was the SSAB Formed?

(continued)

- 1993 National Policy Dialogue - develop recommendations to improve the process for federal facility cleanup decision-making
  - DOE, other Federal agencies, Tribal governments, Native American organizations, and local governments
  - Recommended that a SSAB be established
- 1994 – EM SSAB Charter approved



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# Where Are the Local SSAB Affiliates?



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# SSAB/CAB Documents

- Federal Advisory Committee Act
- Standard Operating Procedure
- SSAB Federal Charter
- DOE Guidance

Documents available on the CAB website at  
[www.ntscab.com](http://www.ntscab.com) under *Procedures*



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# How Does the CAB Operate?

- CAB focuses solely on DOE Environmental Management activities
- CAB work plans are developed annually
- Committees meet on an as-needed basis to address work plan items and formulate recommendations
- Committee recommendations are presented at full Board meetings for discussion / approval
- Recommendations / policies approved via consensus
- Recommendations are provided in writing to the DOE Nevada Site Office or other DOE Environmental Management offices



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# Members and Liaisons

- With the proposed new members, there are a total of 21 CAB members
  - Members serve two-year terms that can be renewed by DOE up to three times (6 year limit)
- Liaisons represent organizations – not themselves or their community (non-voting position)
  - State of Nevada Division of Environmental Protection
  - Department of Energy, Environmental Management
  - Nye County
  - U.S. National Park Service



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# Who Does What?

- Kelly Snyder, Deputy Designated Federal Officer  
Email: [snyderk@nv.doe.gov](mailto:snyderk@nv.doe.gov)  
Phone: 702-295-2836 / Fax: 702-295-5300
  - ✓ Ensures that the Board has opportunities for input
  - ✓ Provides timely information to the Board related to DOE and EM initiatives, decisions, processes
  - ✓ Provides suggestions to the Board regarding EM activities on which its input would be useful
  - ✓ Reviews Board input and ensures timely response
  - ✓ Ensures that community and Board concerns related to EM are addressed
  - ✓ Provides for adequate funding and staff support



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# Who Does What?

- Rosemary Rehfeldt, Facilitator  
Email: [ntscab@nv.doe.gov](mailto:ntscab@nv.doe.gov)  
Phone: 702-657-9088 / Fax: 702-295-5300
  - ✓ Arranges / facilitates Full Board and committee meetings; prepares written summaries
  - ✓ Provides day-to-day communication / notification
  - ✓ Coordinates travel activities
  - ✓ Maintains complete files of CAB activities
  - ✓ Serves as liaison to DOE
  - ✓ Works with CAB to finalize / format written recommendations



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# Who Does What?

- Dr. Helen Neill, CAB Technical Advisor  
Email: [neill@ccmail.nevada.edu](mailto:neill@ccmail.nevada.edu)  
Phone: 702-895-4892
  - ✓ Provides technical assistance to the Board
  - ✓ Utilizes students to assist in CAB support
    - Jennifer Ward



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# CAB Office, Meetings and Travel Procedures



**Rosemary Rehfeldt, CAB Facilitator**  
Community Advisory Board Orientation  
Atomic Testing Museum  
April 9, 2008



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# CAB Office and Website

- The CAB Office hours are Monday through Thursday from 7:30 a.m. to 4:30 p.m.
- Most CAB communication is done via electronic mail
  - CAB e-mail address: [NTSCAB@nv.doe.gov](mailto:NTSCAB@nv.doe.gov)
- All CAB information is posted on the CAB website
  - CAB website address: [www.ntscab.com](http://www.ntscab.com)



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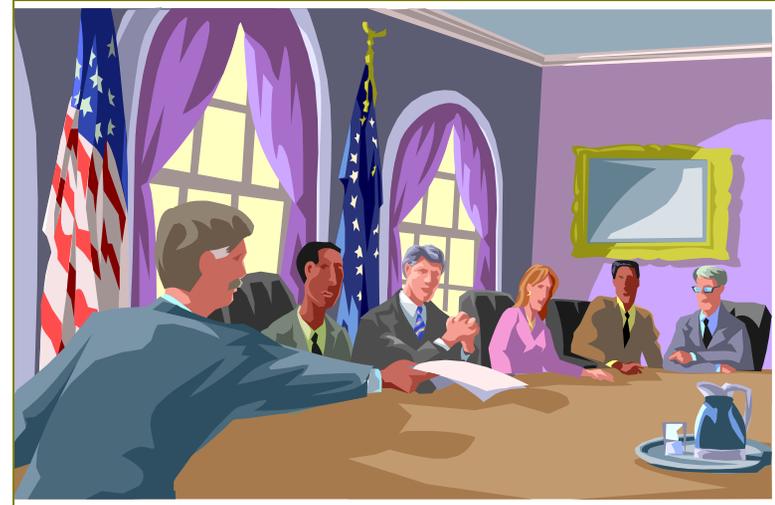
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# CAB Meetings

- There are two types of CAB meetings:
  - Full Board
  - Committees
- Full Board meetings require at least 20 days notice
- Committee meetings require at least 5 days notice
- For each type, a Chair and Vice-Chair are elected annually

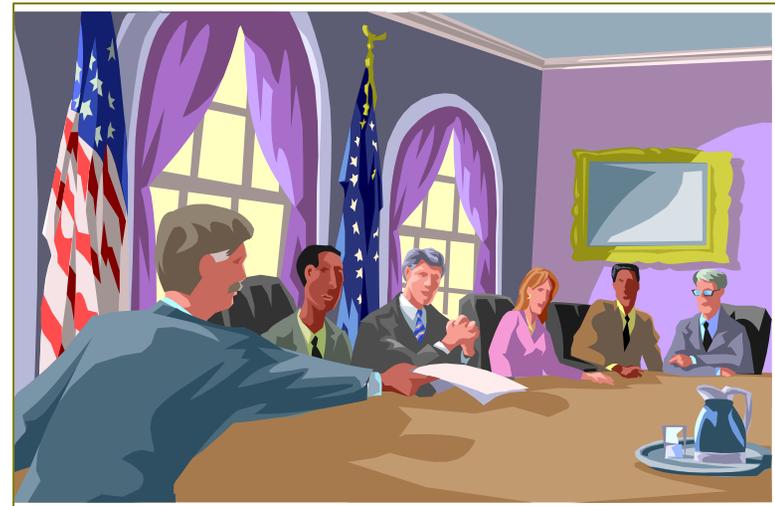


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# CAB Meetings

- The Chair and Vice-Chair for the Full Board oversee the meetings and represent our CAB to the federal Site-Specific Advisory Board
- The Deputy Designated Federal Officer, or appointed DOE representative, must be present at all CAB meetings



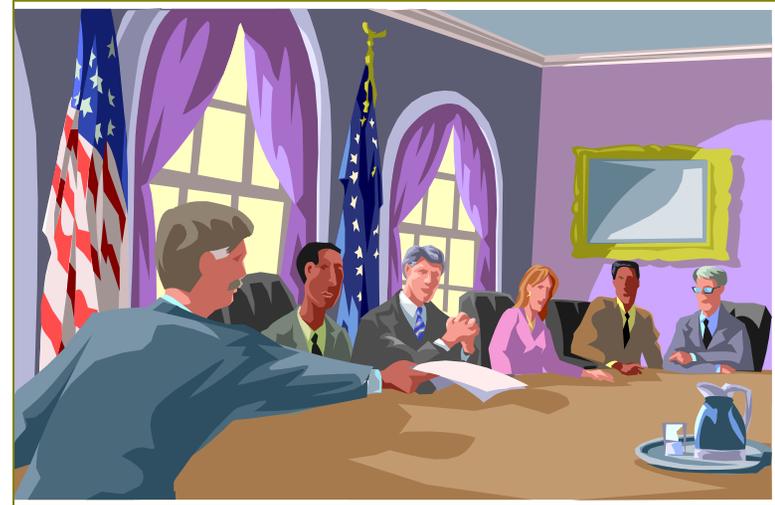
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# CAB Meetings

(continued)

- All meetings are facilitated and structured by following a meeting agenda
- CAB members follow the Meeting Ground Rules
- When needed, a “call-in” number can be available – however, in-person attendance is highly encouraged



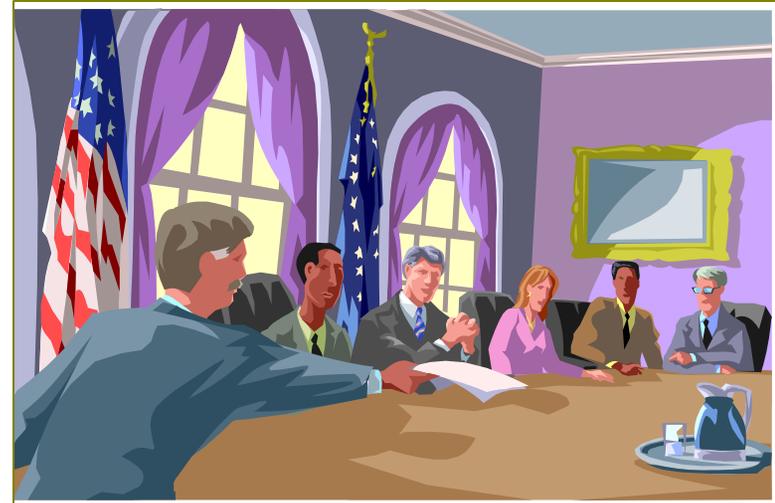
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# CAB Meetings

(continued)

- When applicable, members must wear a visitor's badge
- A "Sign-In Sheet" is available near the entry door at each meeting location



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# CAB Full Board Meetings

- Meetings typically occur on the second Wednesday of every odd-numbered month
- Members and Liaisons receive a meeting packet
- Items included for a “vote” are e-mailed ahead of time
- Items must be reviewed *prior* to the meeting so members are prepared to vote
- Robert’s Rules of Order are followed (i.e. motion, a second, and vote)



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# CAB Committee Meetings

- Committee Chair represents the committee at Full Board meetings
- The committees create a “Work Plan” at the beginning of each fiscal year for the upcoming year
  - Outlines the committee’s primary projects, initiatives, and plans
  - Approved by the Full Board and the DOE



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# CAB Committee Meetings

- When possible, meetings are scheduled on the same date as a Full Board meeting – 1 to 2 hours prior
  - Committee meetings cannot take place concurrently



- CAB members are required to participate on at least one committee
- The CAB's "work" takes place primarily within the committees



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# Current NTS CAB Committee and Activities

- Underground Test Area Committee
  - Focuses on areas at the Nevada Test Site (NTS) used for historical underground nuclear testing
  - Researching and providing recommendations for additional wells



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# Current NTS CAB Committee and Activities

- Transportation / Waste Committee
  - Providing recommendations on a low-level waste transportation study regarding the use of Route 160



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# Current NTS CAB Committee and Activities

- Budget Committee
  - In abeyance until next fiscal year
  - Annually convened to review EM sub-projects and provide recommendations to DOE related to funding prioritizations



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# Current NTS CAB Committee and Activities

- Environmental Management Public Involvement Review Effort (EMPIRE) Committee
  - Reviewing and making recommendations on DOE fact sheets



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# Current NTS CAB Committee and Activities

- Membership Committee
  - In abeyance until next membership drive
  - Meets on an as needed basis to recruit and interview potential CAB members and provides recommendations to DOE



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# Current NTS CAB Committee and Activities

- Outreach Committee
  - New committee
  - In the process of developing a work plan



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# Travel Overview

- CAB members must follow Federal Travel Guidelines
- CAB members make travel arrangements and pay for their travel expenses at the time of service
  - DOE reimburses members after the travel has been completed
- When applicable, travel reimbursement is based on approved federal per diem rates
  - Rates vary from city to city



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# Las Vegas Per Diem Rates

Dates	Hotel	Full-Day Per Diem	Partial-Day Per Diem
January 1 – May 31	\$124	\$ 64	\$ 48
June 1 – August 31	\$ 93	\$ 64	\$ 48
September 1 - 30	\$108	\$ 64	\$ 48
October 1 – December 31	\$108	\$ 64	\$ 48

- Mileage is reimbursed at \$0.505 per mile
- Per diem: daily allowance for food and incidentals while on travel



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# Nye County Per Diem Rates

Dates	Hotel	Full-Day Per Diem	Partial-Day Per Diem
January 1 – December 31	\$ 70	\$ 39	\$ 29.25

- Mileage is reimbursed at \$0.505 per mile
- Per diem: daily allowance for food and incidentals while on travel



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# Traveler Information Form

- For travel reimbursement, this one-time form is completed and returned to the CAB Office for processing
  - The information establishes your account within the federal government travel system
  - Once a CAB traveler is in the system, reimbursement is paid through direct deposit
  - No checks are generated or mailed
- Travel Emergency Contact Information
  - Is supplied in the Traveler Information Form and included in the federal travel system for use if needed



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# Two Weeks Prior to Travel

- CAB meeting notices are sent via e-mail
- CAB members *must* send a “**reply e-mail**”
  - This serves as your “Travel Request”
  - This also serves as your required “Notice of Meeting Attendance”

Members cannot receive reimbursement unless a “Travel Request” is submitted and authorization is approved in advance by DOE



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# Two Weeks Prior to Travel

(continued)

- Roundtrip mileage is always calculated from your *residence* to the *meeting location* and back
  - Mileage is reimbursed for CAB meetings *outside* of your home town
  - In-state meeting locations: Las Vegas Valley, Pahrump, Amargosa Valley, Beatty
- Information is entered into the federal government travel system for authorization and approval by DOE



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# Travel Receipts

- E-mail or fax airfare and hotel receipts to the CAB Office, and send the originals to:  
Rosemary Rehfeldt  
Community Advisory Board  
232 Energy Way, M/S 505, North Las Vegas, NV 89030
- Do not submit receipts for food
  - Food reimbursement is based on per diem rates for each city
- After DOE approves the reimbursement request, ***reimbursements are electronically sent to your bank via direct-deposit***



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# Travel Within Nevada Hotel Information

- CAB members must request a federal government hotel room rate
- DOE will reimburse CAB members who travel out-of-town for an official CAB meeting for one night per month
  - Room requests for more than one night must be made at least two weeks in advance of the meeting date, with approval obtained from Kelly Snyder, Deputy Designated Federal Officer



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# Out-of-State Travel



- The CAB Office makes the arrangements for all out-of-state CAB meetings through Prestige Travel
- An approved travel authorization must precede all out-of-state travel
- Most cities have a government preferred airline and CAB members must travel via these carriers



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# CAB Committee Selection For New Members

- EMPIRE Committee
- Outreach Committee
- Transportation / Waste Committee
- Underground Test Area (UGTA) Committee
- *Select committee(s)*



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## Currently Scheduled CAB Meetings Fiscal Year 2008

<u>Date</u>	<u>Meeting</u>	<u>Location</u>
April 17	EMPIRE Committee	Cheyenne Office
Apr 22-24	Site Specific Advisory Board Chairs Meeting	Hanford, WA
May 14	Full Board Meeting	Atomic Testing Museum
May 21	UGTA Committee	Cheyenne Office
July 9	Full Board Meeting	To Be Decided
Sept 10	Full Board Meeting	To Be Decided

**Meeting schedules are available at [www.ntscab.com](http://www.ntscab.com)**



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