

Hazardous Waste SAND2015-3352PE Operating Permit

Sandia National Laboratories Albuquerque, New Mexico

**HAZARDOUS
WASTE**

Accumulation Start Date _____ Full Date _____
Contents _____
Req. No. _____ Line No. _____
Org. _____ Phone _____

HANDLE WITH CARE!
CONTAINS HAZARDOUS OR TOXIC WASTES

SA 2008-CWJ (7-2001) SN 49093 Approved (11/01/08)



**Sandia
National
Laboratories**

*Exceptional
service
in the
national
interest*

April 2015

Anita S. Reiser

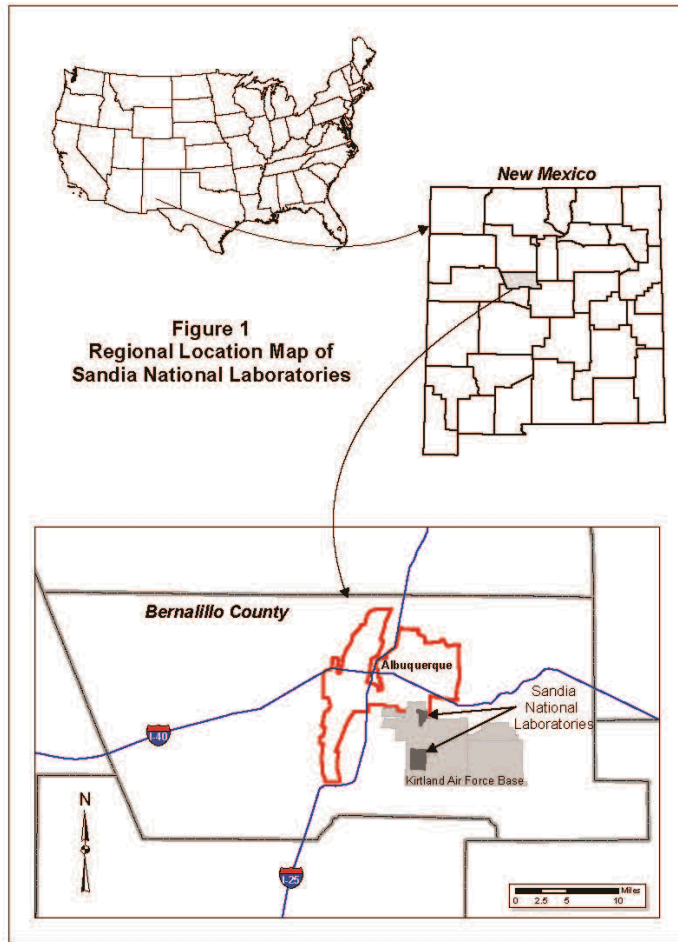
Sandia National Laboratories



U.S. DEPARTMENT OF
ENERGY



Sandia National Laboratories (SNL)



- Research, development, testing, specialized manufacturing
- Owned by US Department of Energy
- Operated by Sandia Corporation
- Located on Kirtland Air Force Base (KAFB) southeast of Albuquerque New Mexico
- Operations in metropolitan Albuquerque area

Permit Status

- **December 14, 2014** New Mexico Environment Department (NMED) Secretary Ryan Flynn signed a Final Order:
 - The Final Order renews and issues a Hazardous Waste Facility Operating Permit (Permit) to DOE and Sandia for hazardous and mixed waste storage, treatment, and post-closure care at SNL
 - The Final Order discussed several issues and specified some modifications to be included in the Permit
 - The Final Order also granted corrective action complete status for 24 solid waste management units and areas of concern
- **January 27, 2015** NMED issued the Permit
- **February 26, 2015** The Permit became effective

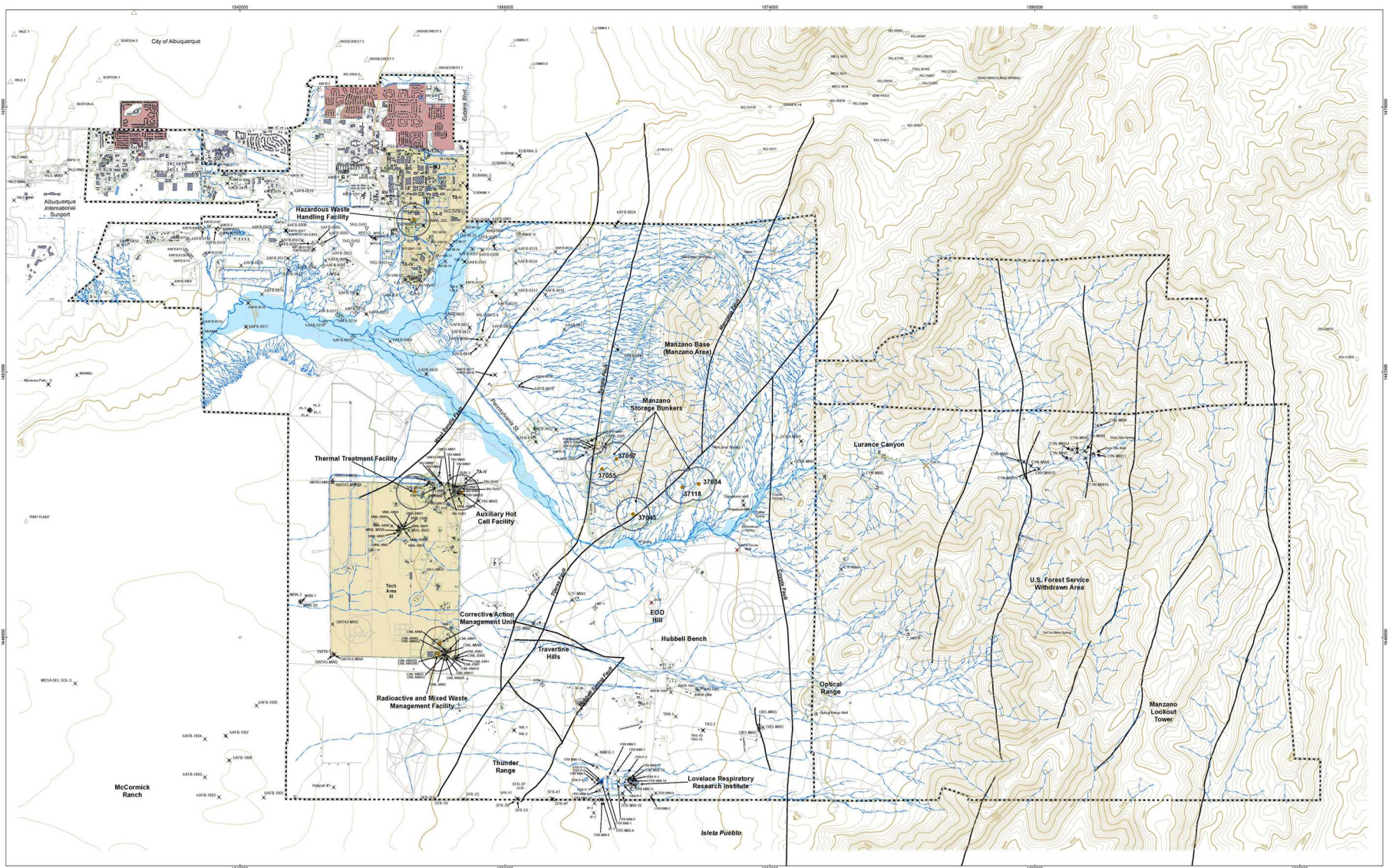
SNL Hazardous and Mixed Wastes

- **Activities generating hazardous and mixed wastes:** research and development, testing, production, maintenance, decommissioning, demolition, waste management
- **Types of hazardous and mixed wastes:** chemicals, process wastes such as solvents and chemical mixtures, debris, other items
- **General waste management process:**
 - SNL personnel generate wastes at numerous SNL locations and accumulate wastes in containers (includes locations in metropolitan Albuquerque)
 - Containers are collected and taken to SNL hazardous and mixed waste management Units
 - **Wastes are stored, and some wastes are treated, at 9 SNL Units**
 - Wastes and treatment residues are packaged and sent to off-site treatment, storage, and disposal facilities (TSDFs)
 - **Post-closure care at 2 SNL Units**

(Activities that require a permit are shown in blue)

Summary of Hazardous and Mixed Waste Operations at SNL Units

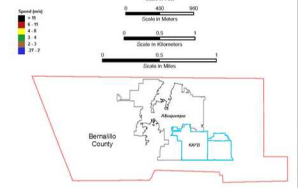
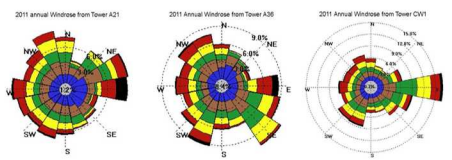
UNIT	HAZARDOUS WASTES	MIXED WASTES	OPERATIONS
Hazardous Waste Handling Unit	various	various	<ul style="list-style-type: none"> • storage in containers • repackaging
Manzano Storage Bunkers (5)	various	various	<ul style="list-style-type: none"> • storage in containers
Radioactive and Mixed Waste Management Unit	various	various	<ul style="list-style-type: none"> • storage in containers • treatment by various methods • repackaging
Auxiliary Hot Cell Unit	various	various	<ul style="list-style-type: none"> • storage in containers • treatment by various methods • repackaging
Thermal Treatment Unit	specific explosive hazardous waste	none	<ul style="list-style-type: none"> • treatment by open burning
Corrective Action Management Unit	treated soil from CWL	treated soil from CWL	<ul style="list-style-type: none"> • post-closure care
Chemical Waste Landfill (separate permit)	excavated during closure, backfilled with soil	excavated during closure, backfilled with soil	<ul style="list-style-type: none"> • post-closure care



- Legend**
- ▽ Vapor Monitoring Well
 - Monitoring Well
 - Observation Well
 - Production Well (Out of commission)
 - Production Well (Abandoned)
 - Production Well (Non-Potable)
 - Plugged and Abandoned Monitoring Well
 - Spring
 - Unknown Water Feature
 - Production Well (Potable)

- Index Contour (200 foot)
- Intermediate Contour (40 foot)
- Surface Drainage
- KAFB Boundary
- Fence
- Fault (exposed or concealed)
- Buildings and Concrete Pads

- SNL/NM Technical Areas
- 100 Year Flood Plain Boundary
- 1000 ft. Buffer on RCRA-Regulated Waste Management Units
- RCRA-Regulated Waste Management Unit
- Meteorological Tower
- Residential



NOTE: The wind direction is the direction from which the wind is blowing. These diagrams show the frequency of occurrence for each wind direction and wind speed. The color indicates the wind speed.

NOTE: 1. Fault locations are from (SRAM and Latta (1999), Karshwin et al., (2002), and Van Hest (2002). The West Sandia fault does not affect the alluvial fan sediments at the water table.

Sandia National Laboratories, New Mexico
Environmental Geographic Information System

**Figure A-2
Unit Location Map
April 2012
Sandia National Laboratories
New Mexico**

Traverse Map: Projection: New Mexico State Plane Coordinate System,
Central Zone, 1983 North American Horizontal Datum
Mapid = mri14302.dn120057.apr1 03/16/14 SWL EGIS ORG 4142 MBR/ML
03/16/14

Permit Details

Permit Parts

1. General Permit Conditions
2. General Facility Requirements
3. Storage of Hazardous and Mixed Waste
4. Treatment of Hazardous and Mixed Wastes
5. Treatment by Open Burning
6. Closure Requirements
7. Post-Closure Care
8. Corrective Action

Permit Attachments

- A. Facility Description
- B. Authorized Wastes
- C. Waste Analysis Plan
- D. Contingency Plan
- E. Inspection Plan
- F. Personnel Training Plan
- G. Closure Plans
- H. Post-Closure Care Plan for the Corrective Action Management Unit
- I. Compliance Schedules
- J. Hazardous and Mixed Waste Management Units
- K. Solid Waste Management Units and Areas of Concern
- L. Figures
- M. Long-Term Monitoring and Maintenance Plan for Solid Waste Management Units and Areas of Concern Granted Corrective Action Complete With Controls

Permit is available at:

<http://www.nmenv.state.nm.us/HWB/snlperm.html#SNL>

Information Repository

- **Permit-related documents will be available to the public**
 - Examples: Permit application, requests for modification, and reports
- **NMED approved location on March 11, 2015**
- **Will be established by August 25, 2015**
 - Zimmerman Library on University of New Mexico main campus in Albuquerque
 - Online index of repository on SNL web page
 - Interested people will be able to sign up for email notification of repository updates
- **DOE and Sandia will send a notice to everyone on the NMED mailing list when the Information Repository is set up**
 - To sign up for NMED mailing list, contact Pam Allen at 505-476-6000 or pam.allen@state.nm.us

Community Relations Plan

- **Collecting ideas**
 - Postcards – collecting at end of this meeting
 - Email to NNSA.Sandia@nnsa.doe.gov
- **Proposed plan due to NMED August 25, will address:**
 - Establishing open working relationship with communities and interested people (members of the public)
 - Keeping communities and interested people informed about permit actions (such as clean-up activities, permit modifications, and contingency plan implementation)
 - Attempting to minimize disputes and resolve differences with communities and interested public
 - Providing mechanism for timely response to individual requests
 - Providing mechanism for semi-annual feedback and input to DOE and Sandia
- **Plan will be posted on SNL web page after NMED approval**

Operations at SNL Hazardous and Mixed Waste Management Units

- **Minimize hazards to human health and the environment:**
 - Prevent unknowing access through fences, locked doors, warning signs in English and Spanish
 - Initial and refresher training regarding safety, waste management, and emergency response
 - Information about waste properties and characteristics for safe management
 - Routine inspections by trained SNL personnel
 - Timely action to correct defects, damage, and items needing repair
 - Fire protection: automatic sprinklers and/or fire extinguishers
 - Emergency response arrangements

Storage at SNL Hazardous and Mixed Waste Management Units

- **Containers for hazardous and mixed waste:**
 - Appropriate for wastes and compatible with wastes
 - In good condition
 - Kept closed except when adding or removing waste.
 - Clearly labeled
 - Inspected regularly
 - Handled carefully
 - Secondary containment for containers of liquids
 - Stored indoors, protected from weather when stored outdoors
 - Leaking or damaged containers: contents moved to container in good condition and spills cleaned up

Hazardous Waste Handling Unit

- **Location:** south of SNL TA-1
- **Two buildings and two modular buildings inside fenced area**
- **Details and operations:**
 - Containers of wastes received from SNL operations and Units
 - Containers of wastes stored in the buildings
 - Repackaged for shipment to off-site permitted TSDFs



**Waste storage bays in
Building 959**

Manzano Storage Bunkers



Front of Bunker 37055

- **Location: Manzano Base**
- **Five bunkers inside fenced area**
- **Details and operations:**
 - Containers of wastes received from SNL operations and Units
 - Containers of wastes stored in the bunkers

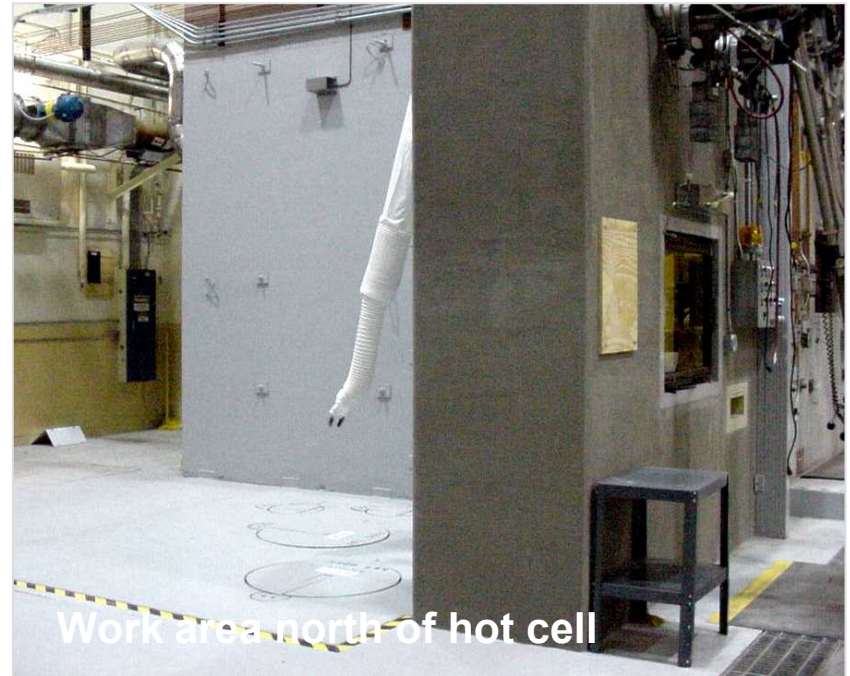
Radioactive and Mixed Waste Management Unit

- **Location: southeast corner of SNL TA-3**
- **Four buildings and two modular buildings inside fenced area**
- **Details and operations:**
 - Containers of wastes received from SNL operations and Units
 - Containers of wastes stored in the buildings, treated by one or more methods
 - Wastes repackaged for shipment to off-site permitted TSDFs
- **Treatment details:**
 - Chemical deactivation
 - Thermal deactivation
 - Stabilization and solidification
 - Amalgamation
 - Macroencapsulation
 - Physical treatment



Auxiliary Hot Cell Unit

- **Location: SNL TA-5**
- **Hot cell, work area, storage silos, and container storage area in Building 6597**
- **Details and operations:**
 - Containers of wastes received from SNL operations and Units
 - Containers of wastes stored in the silos, work area, and container storage area
 - Wastes treated in the hot cell and work area by one or more methods
 - Wastes are repackaged for shipment to off-site permitted TSDFs
- **Treatment details:**
 - Chemical deactivation
 - Stabilization and solidification
 - Macroencapsulation
 - Physical treatment



Thermal Treatment Unit

- **Location: northern part of SNL TA-3**
- **Burn pan south of Building 6715**
- **Details and operations:**
 - Treats explosives and explosive-contaminated wastes generated in Building 6715
 - Steel burn pan volume approximately 23.5 gallons, steel lid fits over pan
 - Pan and lid surrounded by expanded metal cage 4 ft by 4 ft by 8 ft tall
 - On curbed concrete pad with steel liner
 - Surrounded by 8-foot-high soil berm on three sides
- **Upcoming activities under new Permit:**
 - Soil sampling and air sampling



Corrective Action Management Unit



- **Location: southeast corner of SNL TA-3**
- **Containment cell holding treated soils from Chemical Waste Landfill**
- **Details and operations:**
 - Cell constructed with multiple liner systems on sides and bottom
 - Leachate collection and removal system at bottom
 - Cover system topped with native vegetation and gravel mulch to minimize erosion damage
 - Monitor the soil under and around the containment cell
 - 3 vadose zone monitoring systems, quarterly and annual monitoring