

**Update on the Status of
Los Alamos National Laboratory Clean Up,
Waste Isolation Pilot Plant Permit
Modification Requests and
Kirtland Air Force Base Fuel Spill**

RADIOACTIVE AND HAZARDOUS MATERIALS COMMITTEE

June 12, 2013

Presented by the
New Mexico Environment Department

Los Alamos National Laboratory

- 2011 Las Conchas Wildfire
 - Burned more than 150,000 acres threatening LANL
 - One-acre spot fire on lab property quickly extinguished
- Governor Martinez tasked NMED to work with DOE and prioritize the following clean up activities:
 - Disposal of above-ground transuranic (TRU) legacy waste at Technical Area (TA) 54 – Area (MDA) G
 - Protection of regional water resources
 - Groundwater and surface water sources of drinking water

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- Framework Agreement - January 5, 2012
 - Non-binding agreement
 - How removal of TRU waste from MDA G will move forward
 - 3,706 cubic meters of above-ground TRU waste planned for removal by June 30, 2014
 - Newly generated TRU waste produced in FFY12 and FFY13 stored in MDA G removed by December 31, 2014
 - Protection of groundwater and drinking water

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- What about the Consent Order?
 - Completion of Consent Order Remedies by December 2015 cannot be met
 - Inadequate funding
 - Unforeseen circumstances, i.e. chromium contamination
 - LANL desires to renegotiate Consent Order schedule
 - NMED will consider based on demonstration/commitment to remove TRU waste

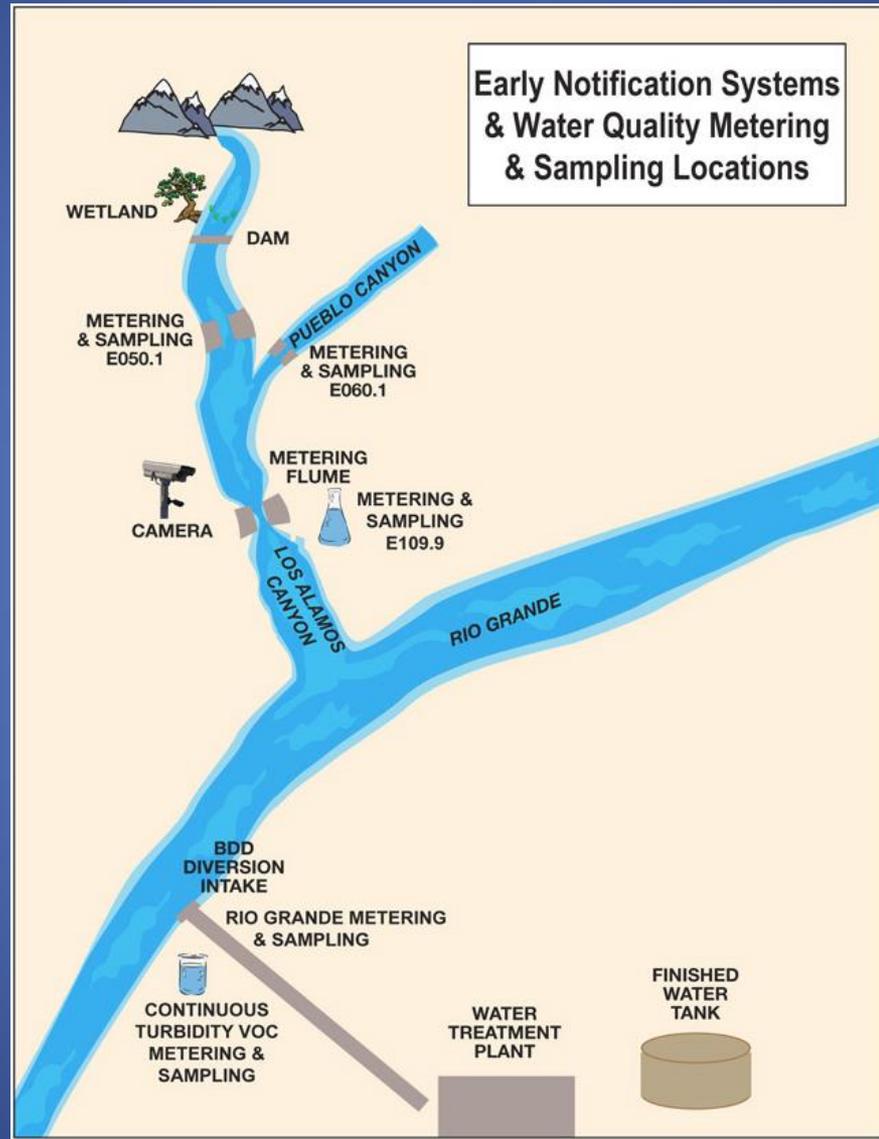
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- TA-63 Transuranic Waste Management Facility
 - Replaces waste management facilities at TA-54
- Status of Permit Modification
 - August 18, 2011 Permit Modification submitted
 - Manage newly generated TRU waste once TA-54 Area G is closed
 - October 24, 2011 Class 3 permit determination
 - January 14, 2013 Draft Permit issued for public comment
 - March 15, 2013 End of public comment period
 - NMED reviewing comments and public hearing request

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- Buckman Direct Diversion (BDD)
 - Managed and operated by BDD Board
 - Provides drinking water to Santa Fe City and County
 - Diverts water from Rio Grande
 - Compliant with safe drinking water standards
 - BDD and NMED measure potential occurrence of LANL origin contaminants and make public results of water testing
- Early notification system
 - No diversion if Los Alamos Canyon flow > 5 CFS
 - 3 real-time storm gaging stations in Canyon send signal to shut down water diversion
- Diversion shuts down when sediment levels are high
 - Regardless of whether or not Los Alamos Canyon discharges stormwater

Buckman Direct Diversion Project



From Buckman Direct Diversion website: <http://bddproject.org/water-quality/early-notification-system/>

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WIPP Permit

- Current Permit - effective December 30, 2010
- Permit Modifications
 - Class 2 modifications
 - July 5, 2012- Addition of a Shielded Container
 - September 28, 2012- Extension issued
 - November 7, 2012- Approved with changes
 - April 8, 2013- Modify Excluded Waste Prohibition
 - Public comment period ended on June 10, 2013
 - Class 3 modification
 - March 18, 2013 - Panel Closure Redesign, Repository Reconfiguration and VOC Monitoring Program Changes
 - Facility Comment period ended May 20, 2013
 - Reviewing comments and public hearing requests

WIPP Permit

Emplaced Waste (July 1, 2012 through May 22, 2013)		
Site	Shipments	Volume Emplaced (m³)
Idaho Nat'l Labs	316	1,622.49
Savannah River Site	159	1,378.30
Los Alamos Nat'l Lab	171	1,336.47
Hanford	0	0.00
Oak Ridge Nat'l Lab	0	0.00
Argonne Nat'l Labs	31	14.08
Sandia Nat'l Lab/NM	0	0.00
BAPL	0	0.00
Totals	677	4,351.34

KAFB Bulk Fuels Facility Spill

- Fuel Storage & Distribution System
 - Tank farm (2.1 & 4.2 million gallon tanks)
 - Constructed ~1952
 - Tanks now replaced
 - Ancillary piping (underground and above ground piping) from tanks to fuel dispensing structures
 - Fuel Offloading Rack
 - now removed
 - Fuels released: aviation gas and jet fuel

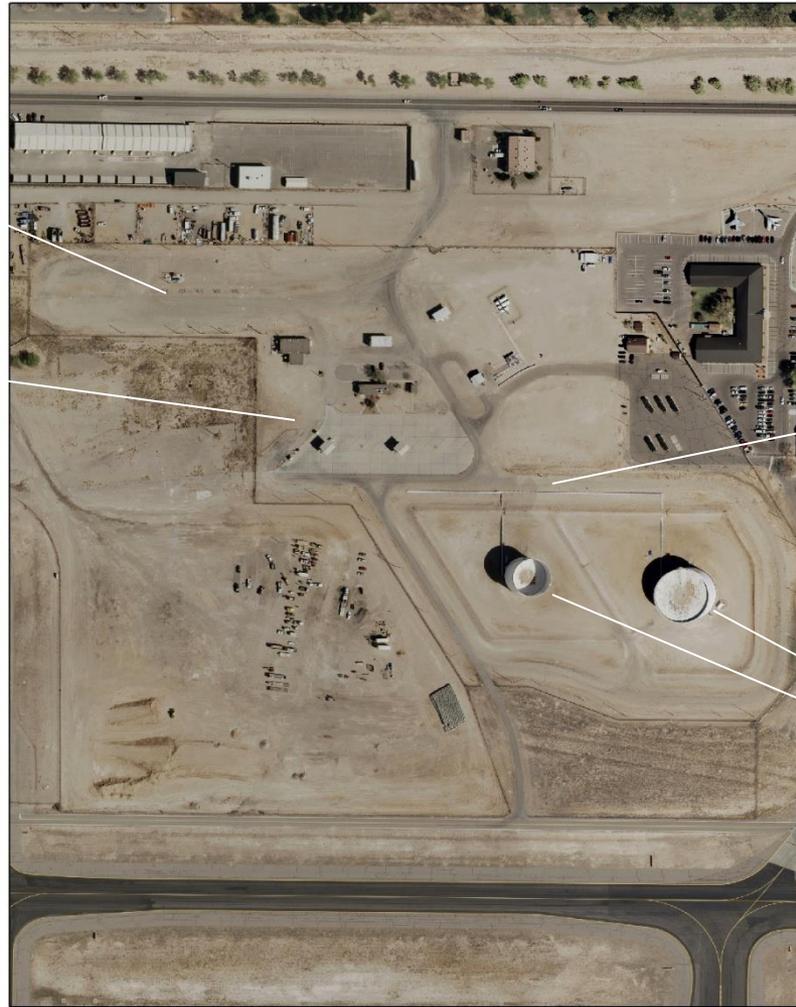
KAFB Bulk Fuels Facility Spill

Former Fuel
Offloading Rack

Underground
Pipeline

Above Ground
Pipeline

Former Fuel
Tanks



0 200 400 Feet

KAFB Bulk Fuels Facility Spill

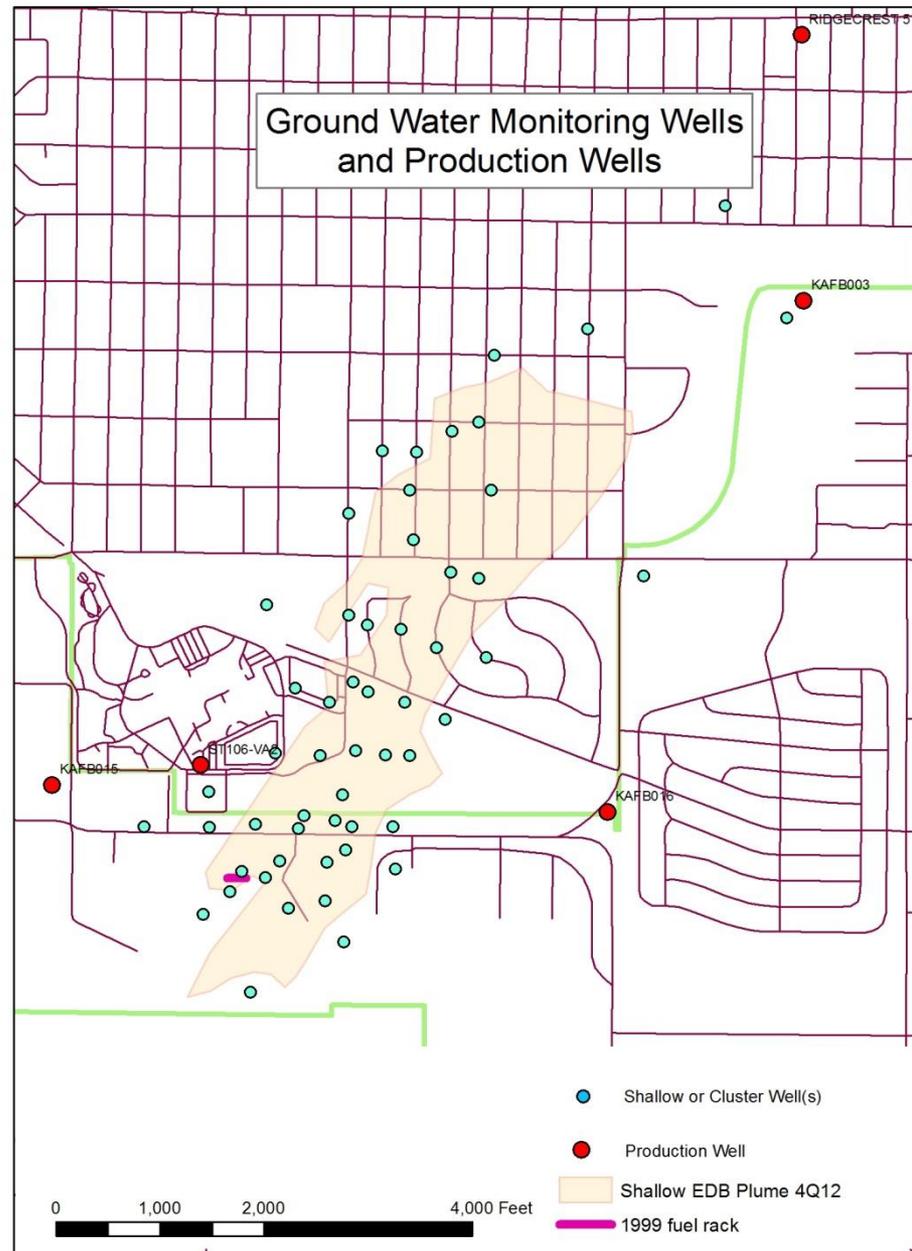
- Contamination
 - Extensive fuel contamination in unsaturated zone in source area
 - Amount of fuel released unknown
 - estimates range from 8-24 million gallons
 - Dissolved-phase groundwater contamination plume
 - Approximately 6,900 ft long by 1,000 ft wide
 - Floating product (LNAPL)
 - ½ mile long by 1,000 ft wide
 - submerged beneath rising water table

KAFB Bulk Fuels Facility Spill

- Groundwater Characterization
 - Northern margin of ethylene dibromide (EDB) plume possibly determined by 3 well clusters installed in October 2012
 - Vertical extent EDB plume not defined
 - Groundwater velocity uncertain
 - Estimates range 120-360 ft/year

KAFB Bulk Fuels Facility Spill

- EDB Contamination
 - EDB (a fuel additive) dissolved in groundwater
 - Threatens water supply wells
 - Water supply wells are not yet impacted
 - Water Utility Authority supply wells
 - Ridgecrest 3 ~ 5,400 ft from EDB plume
 - Ridgecrest 5 ~ 4,000 ft from EDB plume
 - Veterans Administration supply well
 - cross-gradient and ~ 1,000 ft from EDB plume
 - Kirtland Air Force Base supply well
 - KAFB#3 ~ 2,000 ft from EDB plume



Ridgecrest 3,
not shown, is
about 2000 ft
northeast of
KAFB-3

KAFB Bulk Fuels Facility Spill

- **Interim Measures Deployed**
 - KAFB operating newly installed soil vapor extraction (SVE) unit
 - Treatment of extracted vapors from vadose zone using 2 extraction wells

Location of SVE Treatment System and Extraction Wells



KAFB Bulk Fuels Facility Spill

- **Looking Ahead**
 - Continue interim measures
 - Evaluate and, if appropriate, implement additional interim measures
 - Further site characterization of saturated zone
 - Restore groundwater as quickly as possible

New Mexico Environment Department Contacts

"The secret to getting ahead is getting started. The secret of getting started is breaking your complex, overwhelming tasks into small manageable tasks, and then starting on the first one."

— Mark Twain