SAND2015-6802PE

Response to R-15-7 - Resolution Assertions by Citizen Action New Mexico Regarding the Existence of High-Level Radioactive Waste in the Mixed Waste Landfill

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U.S. DEPARTMENT OF ENERGY
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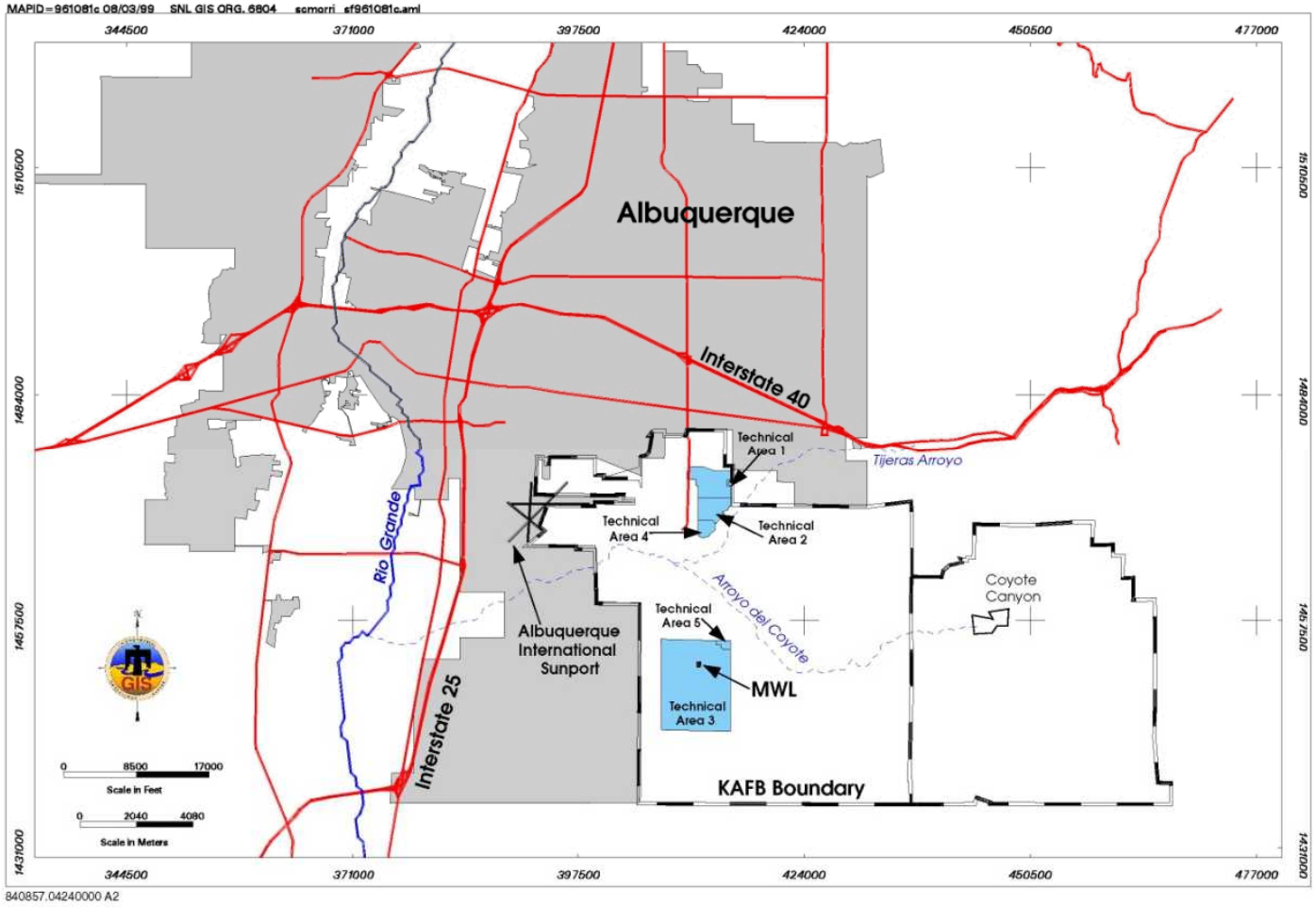
INTRODUCTION

- Resolution R-15-7 was passed on May 20, 2015
- Documents assertions made by Citizen Action New Mexico (CANM) concerning the Sandia National Laboratories (SNL) Mixed Waste Landfill (MWL)
- Purpose of today's presentation is to address each of the CANM assertions contained in Resolution R-15-7
  - Each assertion was addressed in the recent public hearing held by the New Mexico Environment Department (NMED) for its proposal to grant corrective action complete status with controls

Location of Solid Waste Management Unit 76, Mixed Waste Landfill



BACKGROUND

- MWL extensively investigated and monitored since 1990
- Operational history, inventory, and investigation and monitoring results were all addressed in the December 2004 Public Hearing associated with the Class 3 Permit Modification request for Corrective Measures (Remedy Selection)
- Hearing Officer's Report (April 2005) to the NMED Secretary and NMED Secretary's Final Order (May 2005) document remedy selection and conditions for the MWL

2005 HEARING OFFICER'S REPORT & NMED SECRETARY FINAL ORDER

Hearing Officer's Report:

- Inventory is reasonably accurate and complete; MWL does not contain high level waste
- Groundwater not contaminated by releases from the MWL
- Sandia's risk assessments are adequate and investigation data and CMS Report are high quality

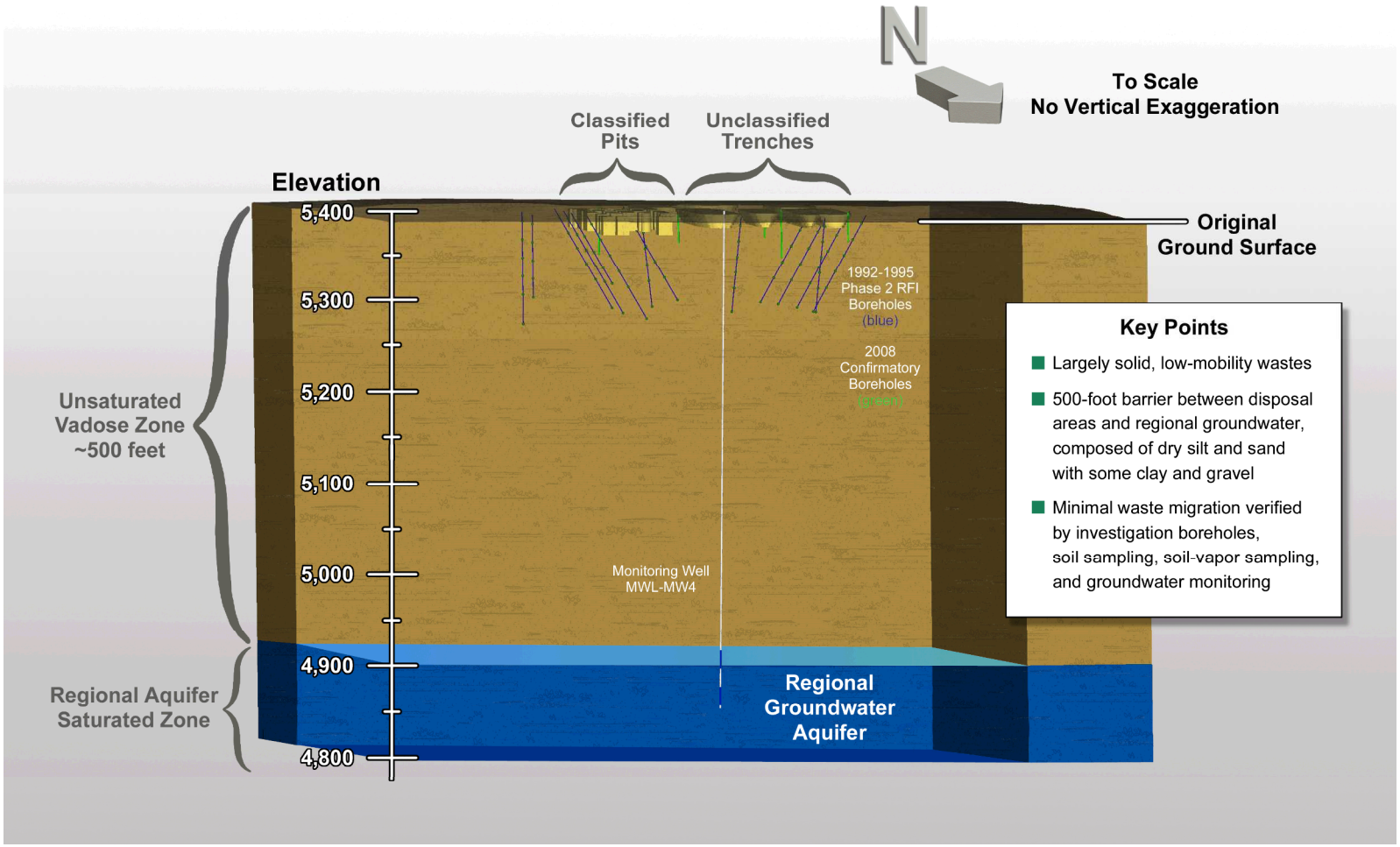
Final Order:

- Remedy: vegetative soil cover with a biointrusion barrier, with additional conditions
  - Institutional and physical controls
  - Fate & transport modeling
  - Long-term monitoring & associated triggers levels
  - 5-year reports

2015 PUBLIC HEARING

- All Final Order corrective action conditions completed by September 2014
- NMED issued Corrective Action Complete certificate on October 8, 2014
- DOE and Sandia requested a Class 3 Permit Modification for Corrective Action Complete with Controls on October 20, 2014
  - DOE and Sandia held a public meeting on November 18, 2014 at the Manzano Mesa Multigenerational Center
  - NMED held a public hearing for its proposal to grant corrective action complete status with controls from July 8-11, 2015

Mixed Waste Landfill - Key Points Summary
Disposal Areas – Vadose Zone – Regional Aquifer



RESPONSES TO R-15-7
Assertion #1

1. CANM asserts that it [MWL] is unique and will remain extremely dangerous to Albuquerque residents for millennia to come if the wastes are not excavated, properly stored and disposed of in a deep geologic repository.

RESPONSE

- *MWL conditions are protective of human health and the environment based upon extensive investigations, 25 years of monitoring, fate & transport modeling, and risk assessments.*
- *The remedy, a vegetative soil cover with a biointrusion barrier combined with institutional and physical controls, ensures the long-term protection of SNL and KAFB site workers and Albuquerque residents.*
- *Required monitoring, trigger levels, and reporting ensure future conditions remain protective and that the public is informed.*
- *See Assertion #6 response regarding deep geologic repository.*

RESPONSES TO R-15-7
Assertion #2

2. CANM asserts that Sandia's records show that the MWL contains 119 barrels of plutonium- and americium-contaminated waste; tons of depleted uranium; and high-level mixed nuclear wastes from nuclear reactor meltdown experiments, nuclear weapons testing, and the 1979 nuclear accident Three Mile Island.

RESPONSE

- *The MWL does not contain high-level nuclear mixed waste, which is the highly radioactive material resulting from the reprocessing of spent nuclear fuel.*
- *The MWL inventory does contain plutonium- and americium-contaminated waste; depleted uranium; and items/material contaminated from nuclear reactor experiments conducted at SNL, nuclear weapons testing, and some items from Three Mile Island.*

RESPONSES TO R-15-7
Assertion #3

3. CANM asserts that Sandia management memoranda from 1997 to 2001, along with thousands of radioactive and hazardous waste disposal sheets, state that canisters containing metallic sodium and high-level nuclear waste were disposed of in shallow pits and trenches at the MWL.

RESPONSE

- *There are no disposal sheets or other records that document disposal of metallic sodium and high-level nuclear waste (HLW) in the MWL.*
- *Sandia memoranda from 1997 to 2001 discussed four empty canisters buried in Pits #35 and 36 that may have been contaminated from nuclear reactor experiments conducted in Technical Area V. During the 2004 hearing, Sandia testified that these canisters did not contain metallic sodium and nuclear fuel material, clarifying the information in the earlier memos.*
- *There is no HLW in the MWL as confirmed by the NMED Oversight Bureau in June 2003, the Hearing Officer's Report to the NMED Secretary in 2005, and as presented in testimony by Sandia during the 2015 hearing.*

RESPONSES TO R-15-7
Assertion #4

4. CANM asserts that Metallic sodium is explosive in the presence of water, so there is the potential for an explosion causing a breach in the MWL's dirt cover and spread radiation into Albuquerque's air and groundwater.

RESPONSE

- *There is no potential for a sodium explosion that would cause a breach in the MWL vegetative soil cover.*
  - *Metallic sodium combined with HLW was not disposed in the MWL.*
  - *The MWL disposal area subsurface soils have a very low moisture content and are protected from percolation and infiltration of soil moisture by the robust, engineered, vegetative soil cover designed specifically for this purpose.*
  - *If there was potential for an explosive reaction, it would have occurred during the MWL operational period.*

RESPONSES TO R-15-7
Assertion #5

5. CANM asserts that Sandia's own records show that the MWL is leaking radioactive waste, solvents and heavy metals from shallow, unlined pits and trenches into Albuquerque's drinking water aquifer.

RESPONSE

- *During the 2004 and 2015 public hearings, DOE and Sandia presented sampling, monitoring and modeling documentation demonstrating that the MWL has not impacted Albuquerque's drinking water aquifer, located approximately 500-feet below the ground surface beneath the MWL.*

RESPONSES TO R-15-7
Assertion #6

6. CANM asserts that High-level nuclear waste such as that buried at MWL requires deep geological disposal in an engineered facility, not shallow disposal in unlined pits and trenches.

RESPONSE

- *The MWL does not contain HLW as stated in the 2005 Hearing Officer's Report to the NMED Secretary, and as presented in direct and rebuttal testimony by Sandia at the 2015 hearing.*
- *The MWL wastes are appropriately described as "low-level radioactive and mixed wastes."*
- *The MWL wastes do not require disposal in a deep geological repository.*

RESPONSES TO R-15-7
Assertion #7

7. CANM asserts that MWL's buried wastes lie above Albuquerque's aquifer stored in plastic bags, cardboard boxes, steel drums, canisters that will eventually decay and corrode.

RESPONSE

- *The various types of containment used for MWL wastes were documented during the Phase 2 RCRA Facility Investigation and were addressed at the 2004 public hearing.*
- *The degradation of waste containers does not impact the protection of human health and the environment based on investigation results and a conservative fate & transport model.*
- *The majority of the MWL wastes are comprised of solid, low-mobility wastes that have not migrated.*
- *Long-term monitoring requirements and trigger levels address the more mobile contaminants and ensure long-term protection.*

RESPONSES TO R-15-7
Assertion #8

8. CANM asserts that Groundwater monitoring for the MWL dump has been inadequate and does not support the decision to leave the wastes under a dirt cover.

RESPONSE

- *The extensive administrative record documents the NMED determination that both historic and current MWL groundwater monitoring have been adequate.*

RESPONSES TO R-15-7
Assertion #9

9. CANM asserts that No complete inventory of the MWL wastes was made.

RESPONSE

- *The MWL inventory was a major topic at the 2004 hearing, and the extensive set of records and supporting information that the MWL inventory is based upon were discussed at length. These records and supporting information, approximately 5,800 pages, were provided to CANM in 2001-2002.*
- *The Hearing Officer's Report to the NMED Secretary stated that the MWL inventory is "…reasonably accurate and complete considering the age of the records, length of time the landfill operated, and the types of wastes routinely disposed of in the landfill."*
- *Inventory completeness was also addressed at the 2015 hearing.*

RESPONSES TO R-15-7
Assertion #10

10. CANM asserts that Sandia possesses the technology to safely excavate and store the MWL wastes.

RESPONSE

- *The NMED remedy decision from the 2004 public hearing is based on the protection of human health and the environment.*
- *The MWL in its current state, unexcavated with the vegetative soil cover and monitoring systems in place, is protective of human health and the environment.*

CONCLUSIONS & RECOMMENDATION

Conclusions:

- DOE and Sandia are in full compliance with all regulatory requirements that apply to the MWL.
- Vegetative soil cover with biointrusion barrier is protective, and monitoring and inspections ensure current and future conditions will remain protective.
- Annual and 5-Year Reports ensure that the public and the Water Authority remain informed of conditions.

Recommendation:

- Follow-up as appropriate.

BACK-UP SLIDE

Timeline for Completion of Final Order Conditions