



Land Use Case Study for Technical Area-21 at Los Alamos National Laboratory Residential or Industrial Cleanup Standards

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Regulations

- **Public Law 105-119, Title VI, Section 632**
 - Authorizes and directs transfer of land to the County of Los Alamos and to Department Of the Interior, in trust for the Pueblo of San Ildefonso
- **40 CFR 264, Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities (RCRA) and 10 CFR 1021, National Environmental Policy Act Implementing Procedures**
 - Process through which potential uses are publically discussed
- **Conveyance Agreement between the Los Alamos Site Office and Los Alamos County**
- **Conveyance Agreement between the Los Alamos Site Office and Pueblo of San Ildefonso**
- **Atomic Energy Act**
- **DOE Order 5400.5, Radiation Protection of the Public and Environment**



Compliance Order on Consent

III.Y.1.c Terms of Transfer

- In transferring land to another entity, the United States shall comply with the terms of section 120(h) of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended ("CERCLA"), 42 U.S.C. § 9620(h). That section applies to any property owned by the United States on which any hazardous substance was stored for one year or more, known to have been released, or disposed of.

III.Y.1.d Restricted Use

- When the United States transfers property that has been **cleaned to a level less protective than a residential use scenario**, the United States will include in the **deed a restriction** that limits future use of the property to the particular use scenario on which DOE has based its cleanup of the property (e.g., if the property was cleaned based on an industrial use scenario, future use of the property would be limited to industrial use).



Compliance Order on Consent

VIII.B.1 Soil Cleanup Levels

- The Department [NMED] has specified soil-screening levels that are based on a target total excess cancer risk of 10⁻⁵ and for noncarcinogenic Contaminants a target HI of one (1.0) for residential and industrial land use. The **target residential and industrial soil screening levels** for selected substances are listed **in the Department's [NMED] *Technical Background Document for Development of Soil Screening Levels* (as updated)**. The Department [NMED] uses the **most recent version of the EPA Region VI Human Health Medium Specific Screening Level (HHMSSL) for residential and industrial soil** as the target screening level for compounds designated as "n" (noncarcinogen effects), "max" (maximum concentration), and "sat" (soil saturation concentration), or ten times the EPA Region VI HHMSSL for compounds designated "c" (carcinogen effects), if a Department [NMED] soil screening level has not been established for a Contaminant for which toxicological information is published. The Respondents shall use the most recent version of this document for determining soil screening levels.

The **Respondents shall use** soil screening levels pursuant to the previous paragraph as cleanup levels for purposes of this Consent Order **unless** one of the following two circumstances applies: 1) cleanup to the specified levels is determined to be **impracticable** in accordance with Section VIII.E; **or** 2) the current and reasonably foreseeable **future land use is one for which NMED has not established soil screening levels**. If either of the foregoing circumstances applies, then the **Respondents may propose cleanup levels** to the Department [NMED] based on a risk assessment and a target excess cancer risk level of 10⁻⁵ or for noncarcinogenic Contaminants an HI of one (1.0), for current and reasonably foreseeable future land use (e.g., residential, recreational, or industrial). The proposed cleanup level will be **subject to the Department's [NMED] review and approval**.



Process to Release

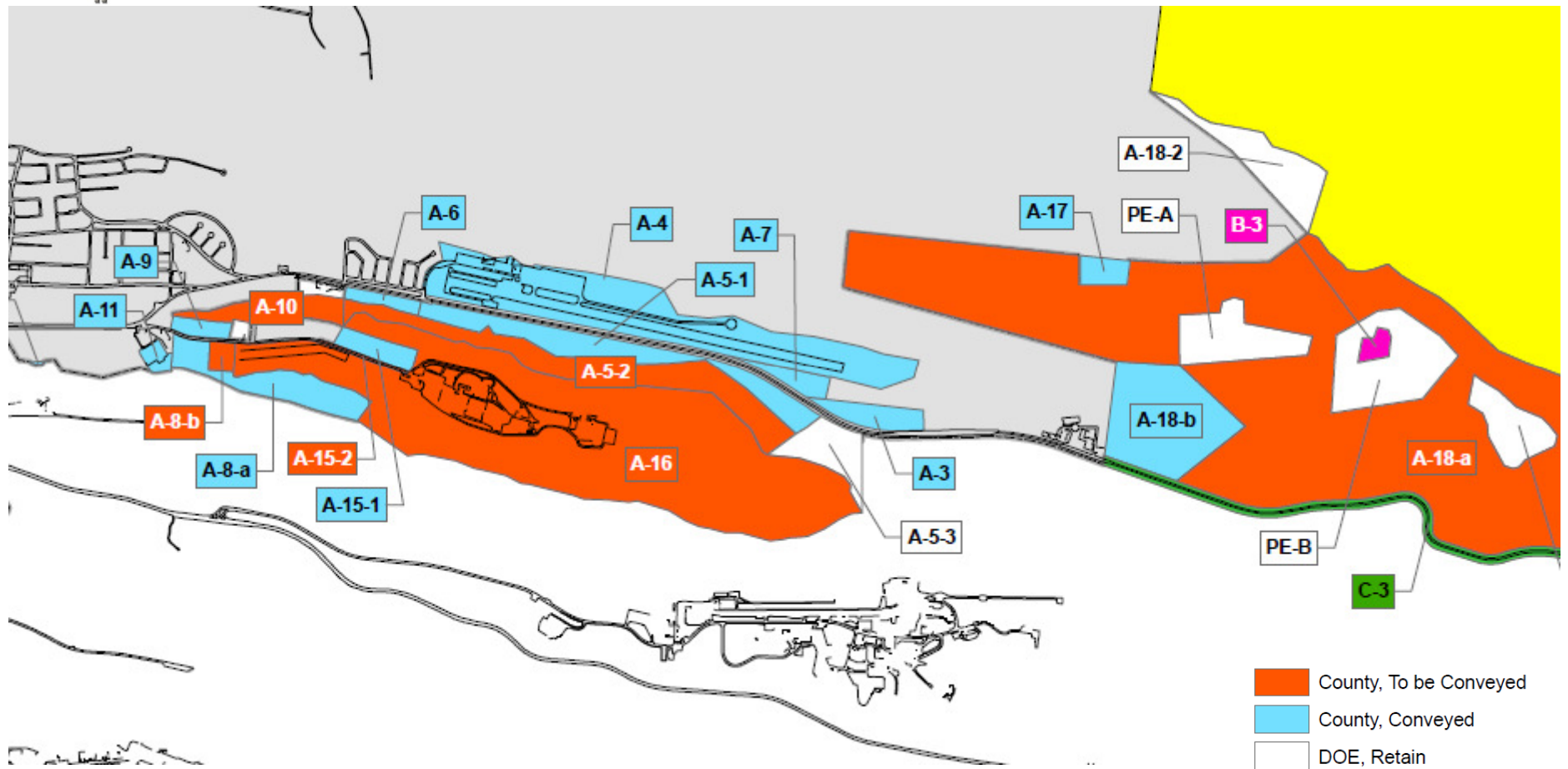
- **Corrective Measures Evaluation or Investigation Report contains results**
 - And proposes recommendation on remedy
- **NMED selects remedy**
 - LANL executes remedy
- **LANL submits Remedy Completion Report**
 - NMED determines acceptance of completion
- **LASO prepares tract for conveyance**
 - Then sends letter to NMED
- **NMED evaluates release (possibly more cleanup)**
 - Provides letter concurring with release
- **LASO executes conveyance**



Adjacent Tract Transfers

- **Tract A-8-a**
 - cleaned to residential use
 - expected condominium use
- **Tract A-9 (DP Road-2 (North) i.e., Tank Farm)**
 - 4.25 acres cleaned to residential
- **Tract A-11 (DP Road West)**
 - 3.09 acres cleaned to residential
- **Tract A-15-1 cleaned to residential but transferred to County for commercial use**
- **Tract A-18a (TA-74 South) awaiting transfer**
 - 520 acres cleaned to recreational standards
 - Issue with Pu contamination within floodplain
 - Recontamination from Acid Canyon (Pu)

Tract Map - TA-21



- County, To be Conveyed
- County, Conveyed
- DOE, Retain
- NMDOT, Retain
- Pueblo, Transferred
- Pueblo, To be Transferred
- Los Alamos Site Office



Historical Facilities / Layouts



Post-Remediation



Tract A-16 (~243 acres)

- **MDA B landfill excavated/backfilled**
 - Cleaning up to industrial standards
 - ARRA project to complete in progress
- **MDA A General's Tanks, pits and trenches excavated/backfilled**
 - Clean up to industrial standards
- **DP West & DP East facilities demolished/removed**
 - Clean up to industrial standards
- **MDA T shaft wastes capped with engineered cover**
 - Cut out of expected land transfers because of contents
 - Cleaned up surface to industrial standards



Challenges

- **MDAs and SWMUs with different potential uses in close proximity with each other**
- **Splitting tracts with different standards possible**
- **Determining acceptable future county land uses**
- **NMED deed restriction enforcement**
 - Authority through consent order arguable
- **Cost differential to achieve residential standards could be substantial**
 - Estimates are to achieve industrial use standards
- **Long-term monitoring of MDA T within ring of transferred lands**
 - i.e., wells, physical controls, and institutional controls



Summary

- **Strict regulations but allow local use development**
- **Requirements for residential standards or deed restrictions**
- **Plans for thorough investigations, cleanup and land conveyance**
- **History of transferring adjacent lands for residential purposes**
- **Most wastes expected to be excavated, areas cleaned to industrial use standards, and conveyed**
- **Single but central area expected to be capped and control retained by DOE**

Feedback



- **Thoughts?**
- **Recommendations?**