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Title: Updating LANL's Ambient Air Monitoring Network (Airmet)

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Updating LANL's Ambient Air Monitoring Network (Airnet)

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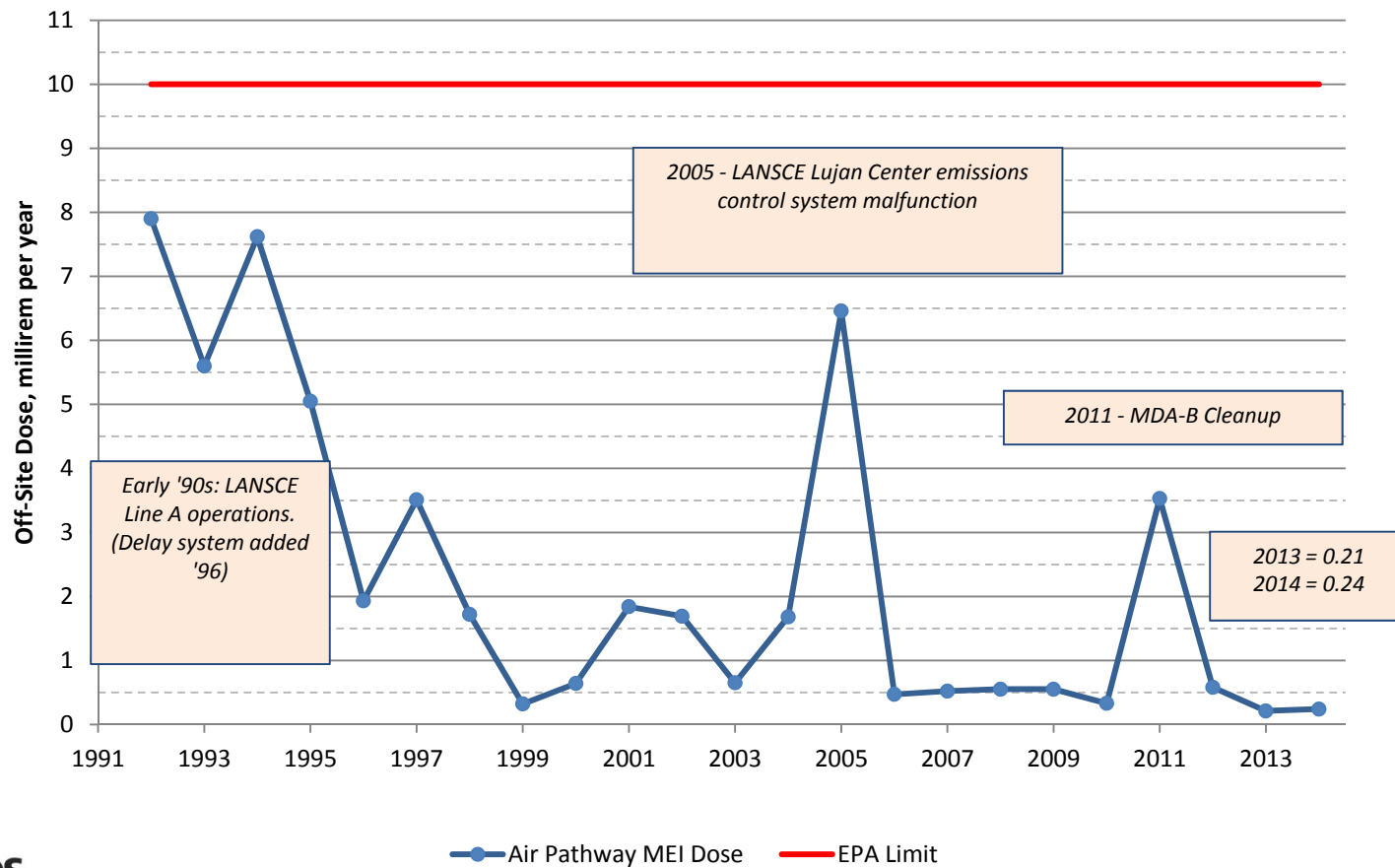
Rad-NESHAP Compliance Program

- Clean Air Act – limits emissions of airborne radionuclides from DOE facilities
- 10 millirem per year limit to Max Exposed Individual (MEI) member of public
 - 2013: 0.21 mrem
 - 2014: 0.24 mrem
- Program Components
 - Stack sampling at major sources (PF-4, CMR, WETF)
 - Track radionuclide usage at minor sources (Sigma, TFF)
 - Ambient air sampling at public locations (Airnet)
 - Last systematic review of Airnet program – 2001

***Lowest
levels in
20+ years!***

2013 & 2014: Lowest Off-Site Doses in 20+ Years

Air Pathway: Annual Off-Site Dose (mrem)



Airnet System Background

- Airnet = ambient air monitoring for radionuclides
 - Used for Clean Air Act compliance for non-point/diffuse sources
 - Examples: evaporation tanks; open-air work; environmental cleanup
 - Measures concentrations of tritium and rad particulates at public receptor locations
 - Bi-weekly sampling
 - Reported to EPA annually as part of Radionuclide NESHAP Emissions Report



Airnet – Need for Change

- Original system approved by EPA in 1996 for compliance
 - Minor tweaks in subsequent years. Need comprehensive review.
- LANL operational changes
 - Tritium facilities shut down (TA-33; TA-41)
 - Omega West Reactor demolition
 - Increase in RLW evaporation
 - Isotope Production Facility @ TA-53
- Los Alamos County changes
 - Airport Basin & Entrada Drive: new receptors
 - Trinity Drive / NM502 road work affect station locations
 - Public expansion near LANL (Research Park) needs coverage

LANL policy – move stations to LANL property (where possible)



EPA Guidance for Sample Sites (1996 FFCA)

- Locate stations between LANL & public
 - Max air concentrations at boundary
- Sample all populated areas around LANL (~10 km)
- Sample “islands” of public inside DOE boundary
 - Royal Crest; Ice Rink; Research Park
- Evaluate diffuse sources
 - Sample at MEI locations for each source
 - Sample sectors adjacent to MEI if public receptor exists there

LANL Siting Process

- Uniform along LANL border with town sites
 - Los Alamos – 15 stations (approx. 500-600 meter spacing)
 - White Rock – 4 stations (approx 800 meter spacing)
- Address island & near-field receptors
 - Bandelier National Monument (3 areas)
 - Landfill; Royal Crest; Ice Rink; Research Park
 - Locate stations to measure current LANL emissions
- Regional / Northern New Mexico
 - 3 sites – Espanola, Pojoaque area, Santa Fe
- Special sites – LANSCE evap tanks
- QA samples – blanks, duplicate station

Shut Down Stations (4) & New Stations (3)

- TA-21 Entrance Gate station shut down (water tower work)
 - Other stations better measure public locations.
- LA Canyon station shut down
 - No sources in canyon; TA-41 tritium facility & Omega West Reactor both D&D'ed.
- Pajarito Acres station shut down
 - Duplicative coverage, other stations better measure LANL emissions.
- Santa Fe downtown location shut down
 - Duplicative coverage, Santa Fe West station (Buckman) in a better location.

New Sites:

- New station at LA Transit Mix (East Jemez Rd)
 - Fills potential “gap” in town site coverage
- Two new stations at east end of Los Alamos town site
 - Cover potential emissions from LANSCE evaporation tanks; 2 compass sectors



Station Relocations (6) – Improve Receptor Coverage

Station relocations to better measure any LANL emissions

- Airport Terminal Bldg station moves to west runway
- Airport “end runway” station moves to Co-Op Market
- Crossroads Church station moved to Knights of Columbus
- Bandelier Fire Lookout moves to Bandelier Entrance Gate
- TA-16 S-Site Cafeteria station moves to West Gate, near Ponderosa Campground
- White Rock Pajarito Road @ NM-4 relocated onto LANL property (ADSM preference)

Los Alamos Town Site – Uniform Coverage

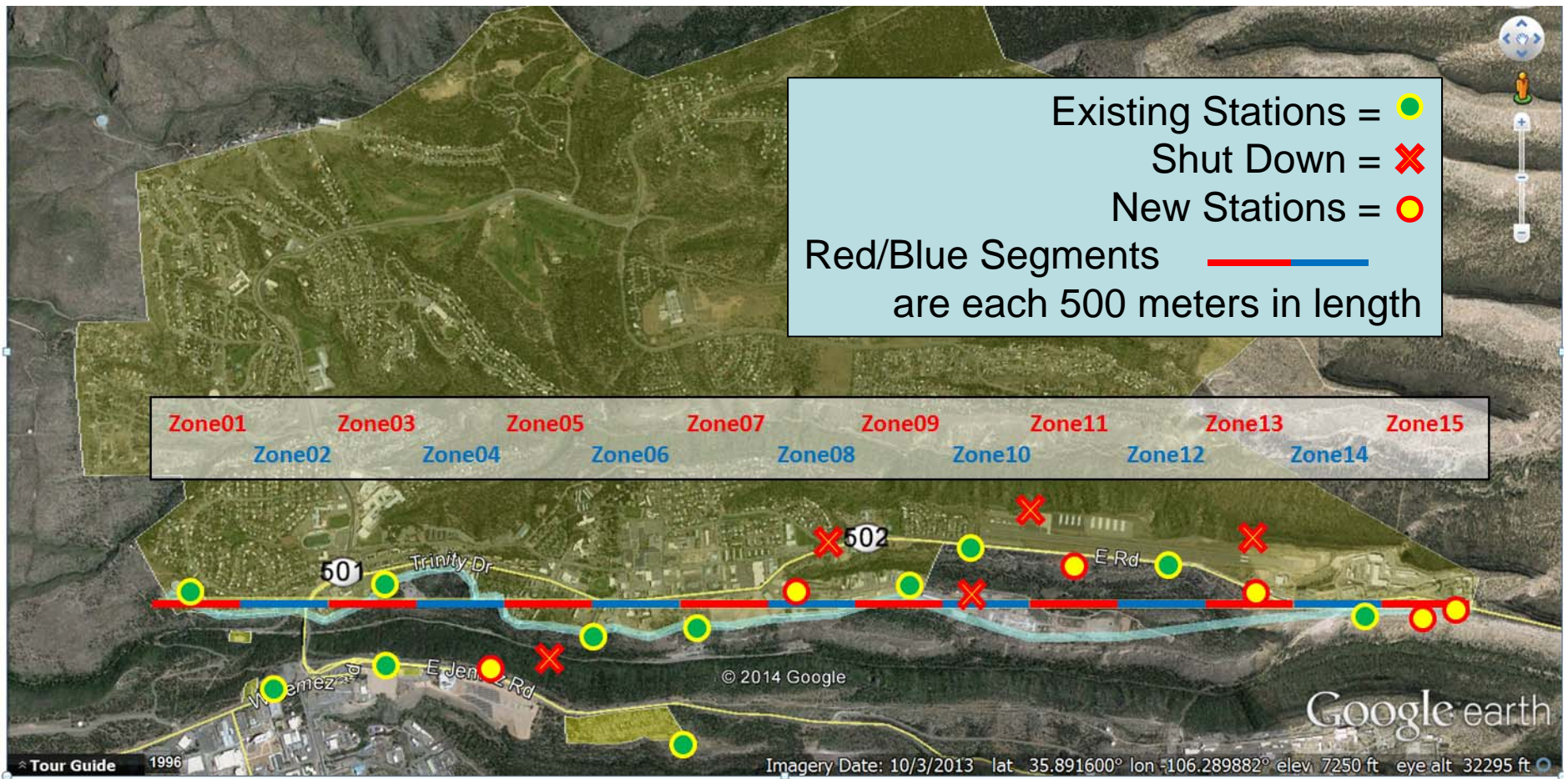
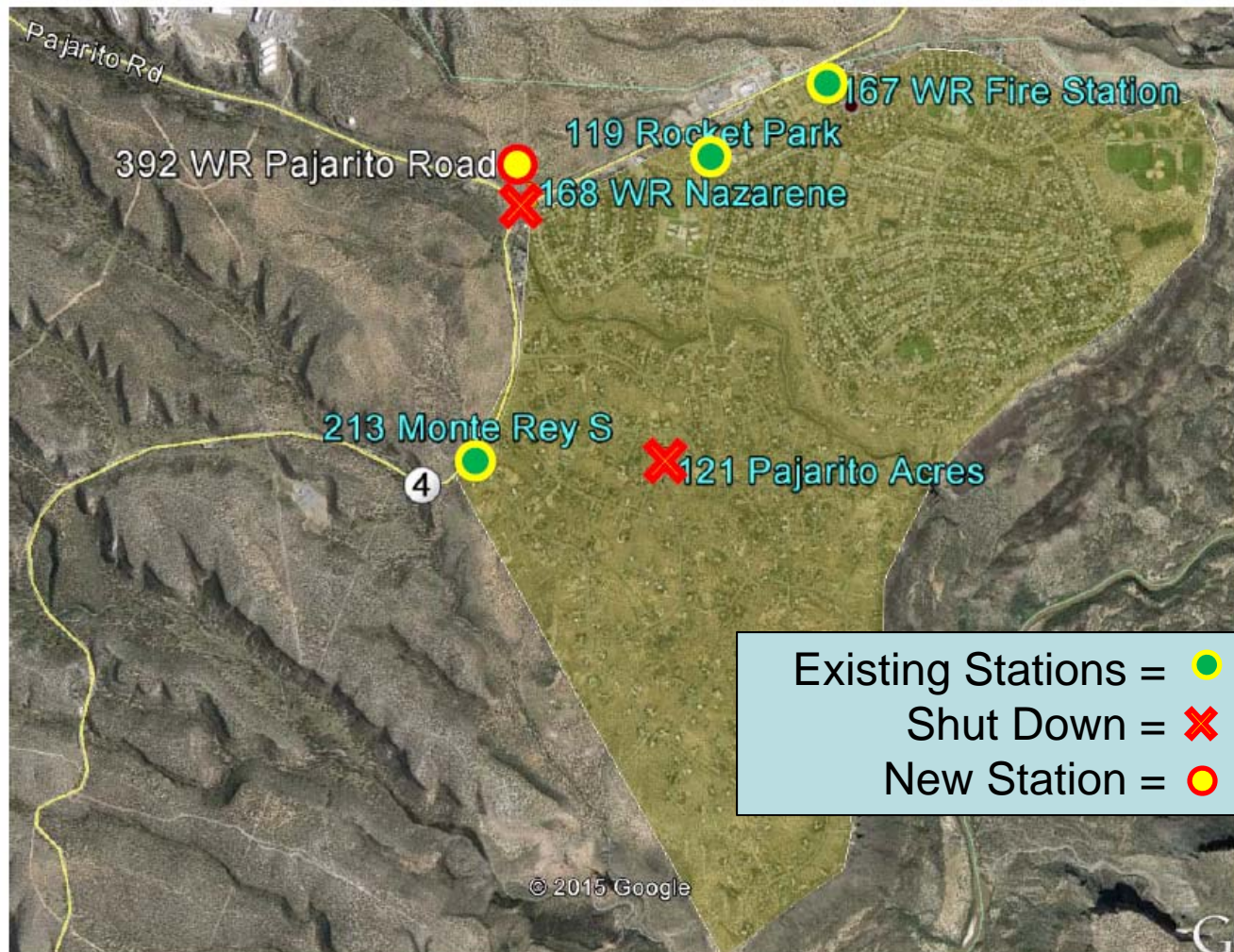
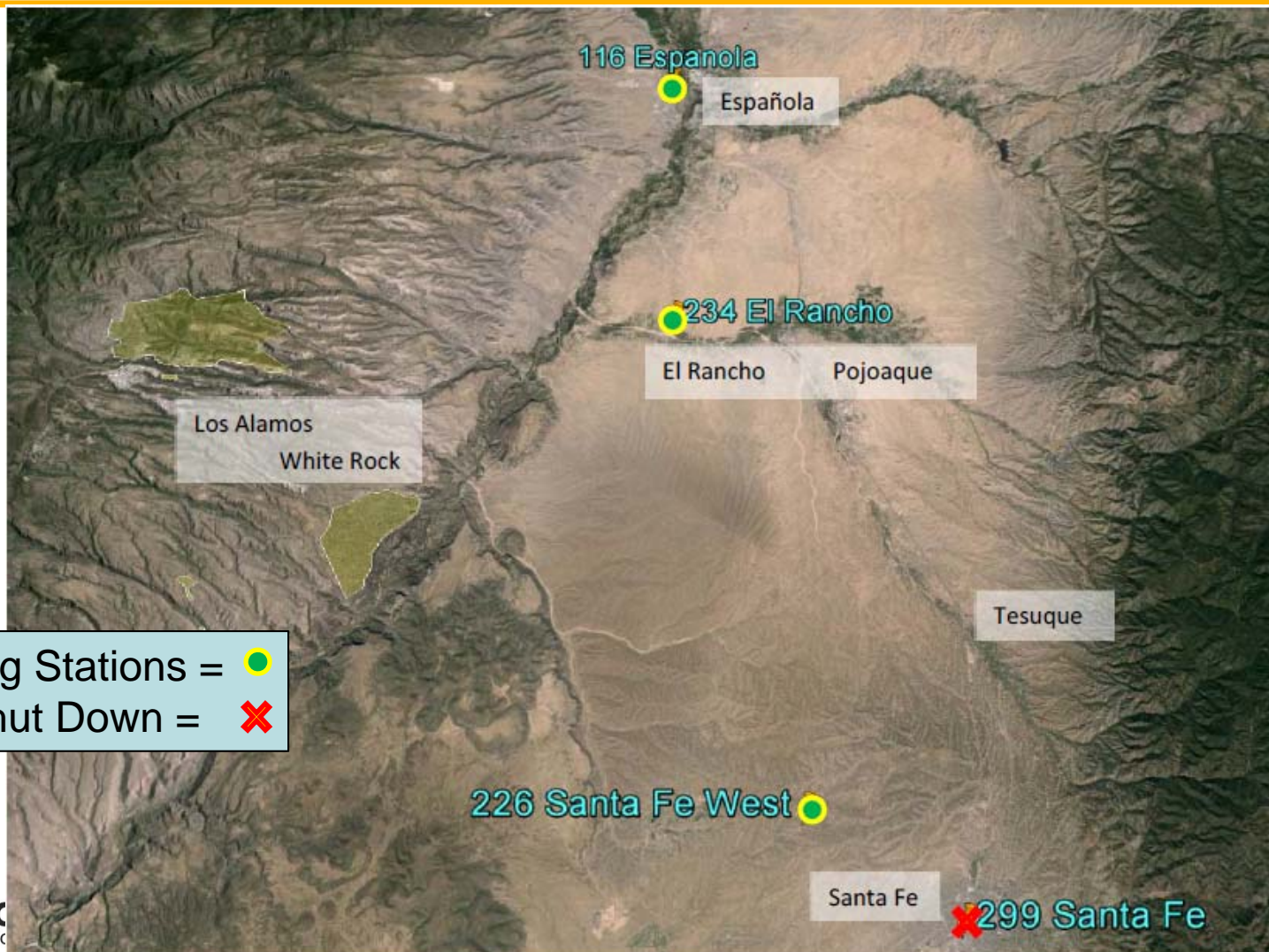


Figure 2 – Los Alamos Town Site. New & Existing Airnet stations are indicated, along with 500-meter zones

White Rock Town Site – Uniform Coverage



Northern New Mexico Regional Stations 2015



3 Existing Stations = ●
1 Shut Down = ✖