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Title: LANL Meteorology Program

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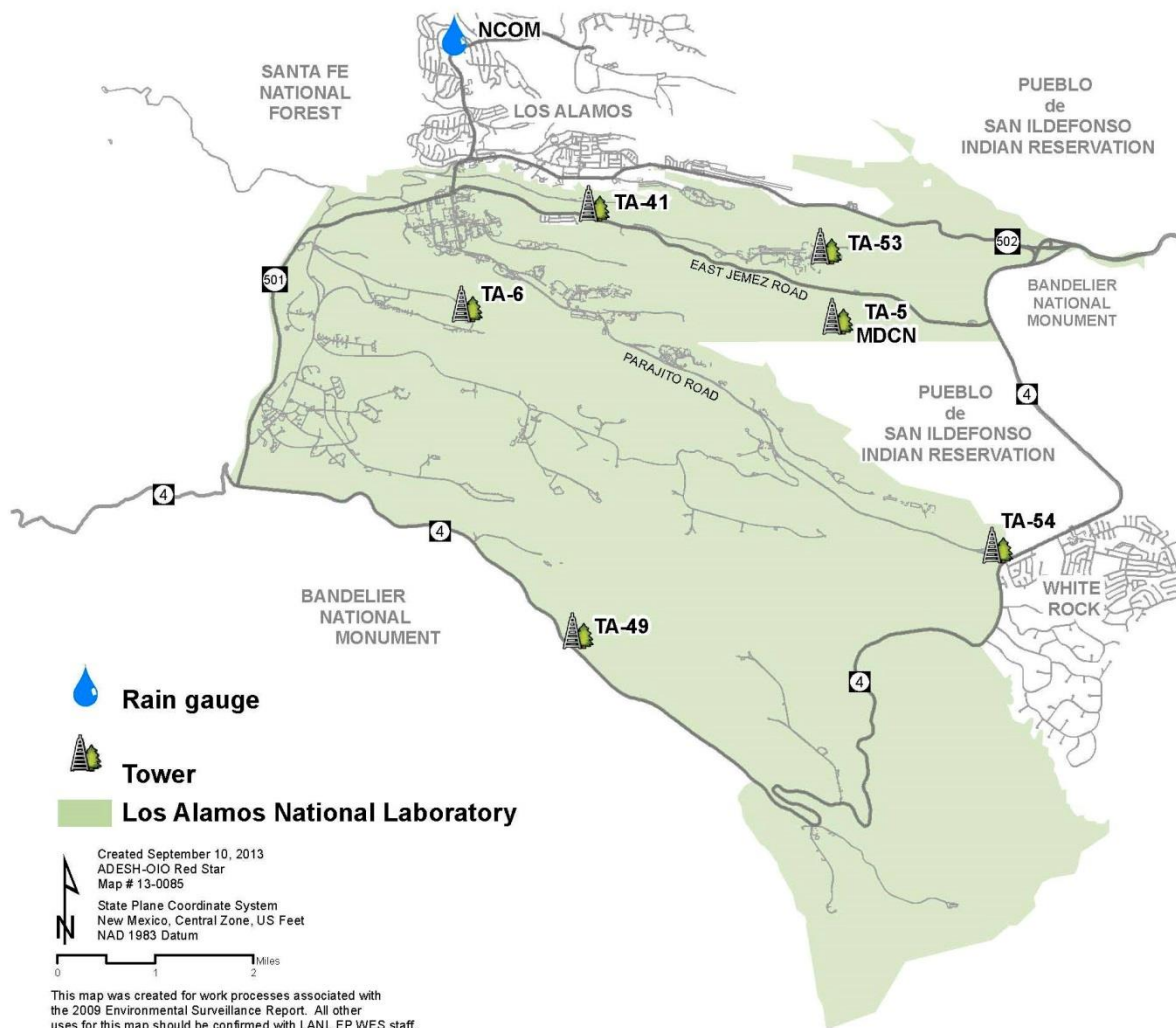
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LANL Meteorology Program

January 2015

- Goal – Provide all routine meteorology measurements for LANL operational requirements
- Required by Clean Air Act; DOE Orders 458, 436, 151; Clean Water Act, RCRA, OSHA
- Needed by LANL research experiments
- Provide data to users via The Weather Machine website - <http://weather.lanl.gov/default.asp>



Measurements : 15 minute averages and 24 hour summaries of means/extremes

- Wind Speed & Direction, standard deviations
- Vertical speed, standard deviations
- Temperature
- Relative Humidity
- Pressure
- Precipitation
- Solar radiation – short wave and long wave
- Sodar – wind and temperature up to 1000 m above ground level

TA-53 150 ft tower – 3 levels on instrument
plus a ground station (temp, humidity, pressure)



Typical boom installation: wind speed,
direction, vertical speed, temperature,
humidity





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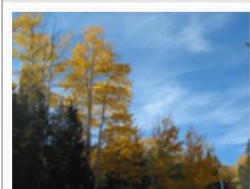
Date: Thursday, February 05, 2015 | Time: 12:02 MST (19:02 UTC)

The Weather Machine

LOS ALAMOS NATIONAL LABORATORY

LANL Observations Regional/U.S. Observations Forecast Products LANL Climatology Data Requests

LANL Welcome...



Welcome to the Weather Machine! The Weather Machine provides access to the latest meteorological observations, climatological information, and weather forecast products for the Los Alamos area. Questions/Comments? [Contact us](#) »

Hover over image for caption...

Today's Weather Almanac »

LANL Watches, Warnings, and Advisories...

Currently, there are no hazardous weather conditions forecasted for this area.
(Last Update: 12:01:53 PM 2/5/2015)

Forecast problem please use NOAA

[NOAA](#) »

LANL Current Conditions...

[More Data](#) »

| | | | | | |
|--------------------|-------|-------|-------|-------|-------|
| Tower (tower): | TA6 | TA41 | TA49 | TA53 | TA54 |
| Date (mm/dd): | 2/5 | 2/5 | 2/5 | 2/5 | 2/5 |
| Time (hh:mm): | 11:45 | 11:45 | 11:45 | 11:45 | 11:45 |
| Temp (°F): | 47.8 | 45.3 | 48.0 | * | 47.1 |
| Wind Chill (°F): | 45.1 | 43.9 | 45.7 | * | 47.1 |
| Dew Point (°F): | 24.6 | - | 21.2 | * | 25.5 |
| RH (%): | 39 | - | 34 | 42 | 42 |
| Speed (mph): | 6.0 | 3.6 | 5.4 | 3.8 | 2.0 |
| Dir (from): | SE | ESE | SE | E | ENE |
| Precip Today (in): | 0.00 | - | 0.00 | 1.01 | 0.00 |

NOTE: All times are reported in MST.

weather.lanl.gov/default.asp

Meteorology Program

- Governing document: Technical Project Plan for Meteorology Monitoring (ENV-PLAN-300)
- Meteorological Monitoring at Los Alamos (LA-UR-14-23378)
- A portion of the Tech Project Plan is the LANL approved User Calibration Program

Meteorology Standards

- ANSI 3.11-2005 (R2010) Determining meteorological information at nuclear facilities
- EPA-454/R-99-005 Meteorological Monitoring Guidance for Regulatory Modeling Applications
- DOE/EH-0173T Environmental Regulatory Guide for Radiological Effluent Monitoring and Environmental Surveillance

Routine Operations

- Daily/Weekly/Monthly/Yearly Data QA Reviews
- Semi-annual calibrations for wind instruments
- Annual calibrations for temperature, pressure, humidity, solar radiation
- Annual tower maintenance/hoist inspections and repair as needed
- All to keep quality assured data available to customers

Independent Assessments

- Review of meteorology program calibration procedure against manufacturer requirements (July 2013)
- Review of User Calibration Program by LANL S&CL (December 2014)
- Assist Visit by DOE Meteorology Coordinating Council (July/August 2014)
- Review of calibration process by Sandia National Laboratory meteorology instrument technician (planned for March 2015)

Meteorology Services

- Providing STAR files for atmospheric dispersion modeling
- Providing weather forecasts and dispersion modeling for LANL EOC
- Providing wind/temperature data from sodar to support high explosives noise predictions
- Building Design Requirements – temperature, winds, precipitation

Meteorology Services

- Weather forecasts for LANL experiments
- Temperature, pressure measurements to support LANL experiments
- Weather forecasts for safety requirements (operations limited by wind speeds or precipitation)