

**ENVIRONMENTAL MONITORING PROGRAM
LOS ALAMOS NATIONAL LABORATORY**

Statement for Public Hearing
by
U. S. Environmental Protection Agency
on
Draft RCRA Operating Permit
under the
Hazardous and Solid Waste Amendments

1146
Permit

Santa Fe, New Mexico
August 7, 1989

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**ENVIRONMENTAL MONITORING PROGRAM
LOS ALAMOS NATIONAL LABORATORY**

Los Alamos National Laboratory operates a very comprehensive environmental monitoring program so that we know what is happening with respect to Laboratory operations, that we are in compliance with applicable environmental regulations, and that there are no adverse impacts on public health and the environment. This monitoring program began in the 1940's and has continued and expanded since that time. Annual reports of these monitoring activities have been published since 1971 and widely distributed to a number of government agencies (including both the EPA and the State EID), Indian pueblos, state and federal elected officials, the news media, and any organization or individual requesting a copy. These reports detail the operations at the Laboratory, as well as the type, monitoring techniques, and complete results of the environmental monitoring activities. Recent annual reports have been some 250 pages long. The Laboratory currently spends almost \$2 million a year on environmental monitoring activities.

Environmental monitoring demonstrates that the Laboratory's operations have no significant impacts on public health or the environment in any area off of Laboratory property. All significant emissions or effluents are monitored at both the stack or release point, and in the appropriate environmental media (air, surface and ground water, soils and sediments, and foodstuffs). Effluent measurements are made at 87 stacks and 109 liquid discharge points. Ambient environmental measurements are made at a large number of locations on site, within a few miles of the Laboratory boundary, and at regional stations located within the five counties surrounding Los Alamos County. Both radioactive and chemical contaminants are monitored, as appropriate. These include:

| | | |
|---|---------------------------------|---------------|
| o | External radiation measurements | 155 locations |
| o | Air sampling | 27 locations |
| o | Surface and ground water | 75 locations |
| o | Soils and sediments | 66 locations |
| o | Foodstuffs | 29 locations |

Concentrations in the environment are often too small to measure even with sensitive instruments, and in these cases concentrations are estimated through mathematical models.

Support activities are carried out in conjunction with the sampling and monitoring, and include operation of five meteorological towers for weather forecasting and response to any spills or similar incidents, hydrogeological measurements and characterization, and laboratory support. More than 25,000 analyses are carried out for chemical and radiochemical constituents in environmental samples each year.

b Major results of environmental monitoring include:

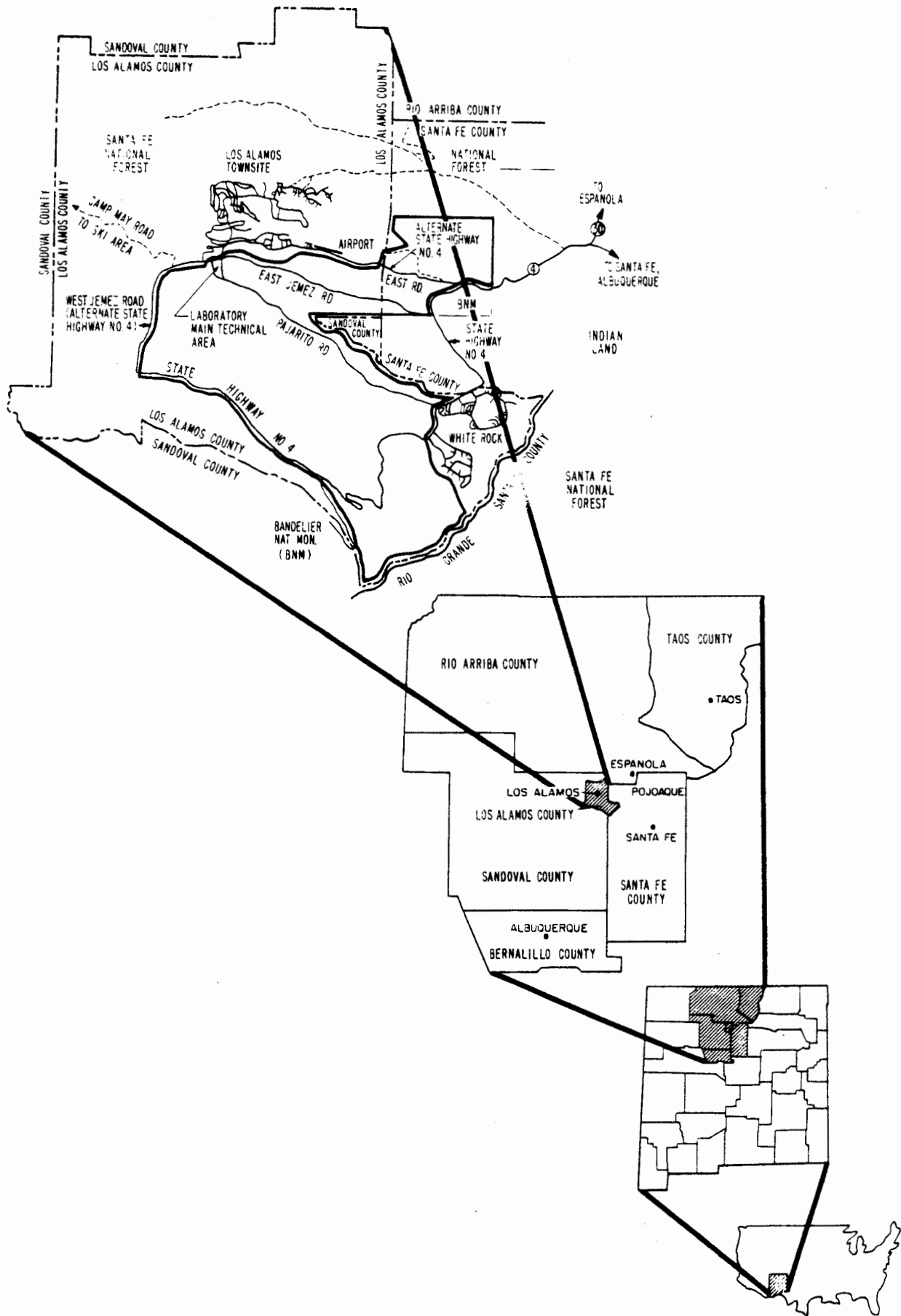
- o **the maximum radiation dose to the public from all Laboratory operations is 5-10% of the DOE Radiation Protection Standard for all pathways (which is equal to or more restrictive than standards recommended by the National Council on Radiation Protection and Measurements and the International Commission on Radiological Protection)**
- o **the maximum radiation dose to the public is about 30-40% of the EPA Radiation Limit (which governs the air pathway only)**
- o **the location at which the maximum radiation dose to the public occurs is located on the outskirts of Los Alamos. The character of the effluents and meteorology result in extremely low levels in all counties adjacent to Los Alamos County**
- o **ground water used for water supplies has not been affected by Laboratory operations, including both chemical and radioactive contaminants**
- o **off-site impacts of Laboratory operations on surface water and foodstuffs are minimal, if detectable at all**

Attached is a table that presents a summary of 1988 radiation exposures to the public from Laboratory operations for the maximum exposed individual. This table compares the values for each pathway and the total with the Radiation Protection Standard and natural background radiation.

Also attached are figures that show locations on or near the Laboratory site for sampling and monitoring of external radiation, air sampling, surface and ground water sampling, sediment sampling, and soil sampling.

1987 Radiation Exposures to the Public from LANL Operations for the Maximum Exposed Individual

| Pathway | Effective Dose Equivalent (mrem/year) |
|--|--|
| <i>Air</i> | |
| Inhalation | 0.02 |
| External Exposure | 6.1 |
| <i>Direct External Radiation</i> | <0.1 |
| <i>Surface Water</i> | |
| Produce | 0.07 |
| Fish | 0.03 |
| Drinking Water | 0 |
| <i>Groundwater</i> | |
| Drinking Water | 0 |
| TOTAL | 6.3 |
| <i>DOE Radiation Protection Standard</i> 100 (above background and medical exposures) | |
| <i>Natural Background Radiation</i> 325 | |



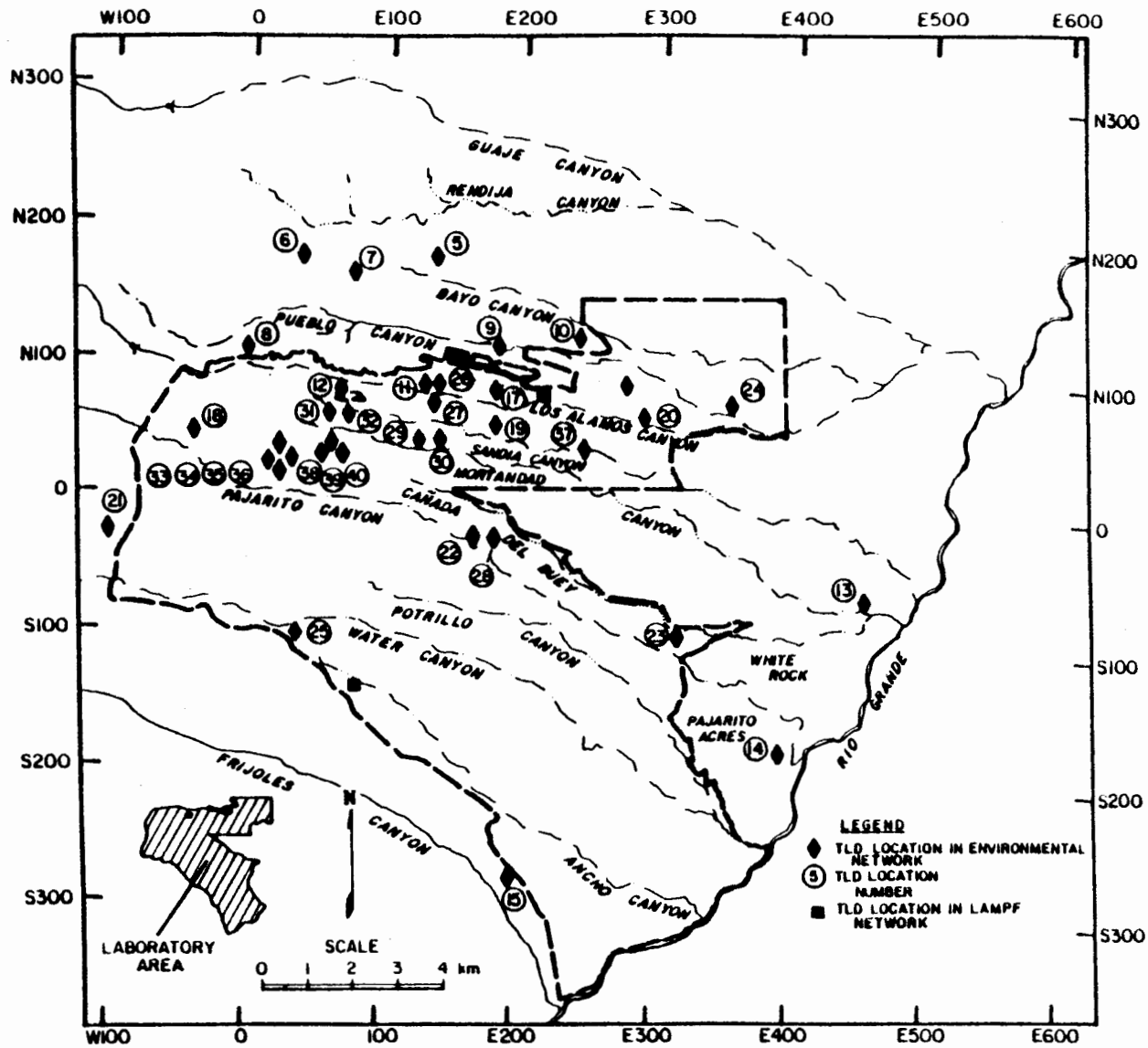


Fig. 6. Thermoluminescent dosimeter (TLD) locations on or near the Laboratory site.

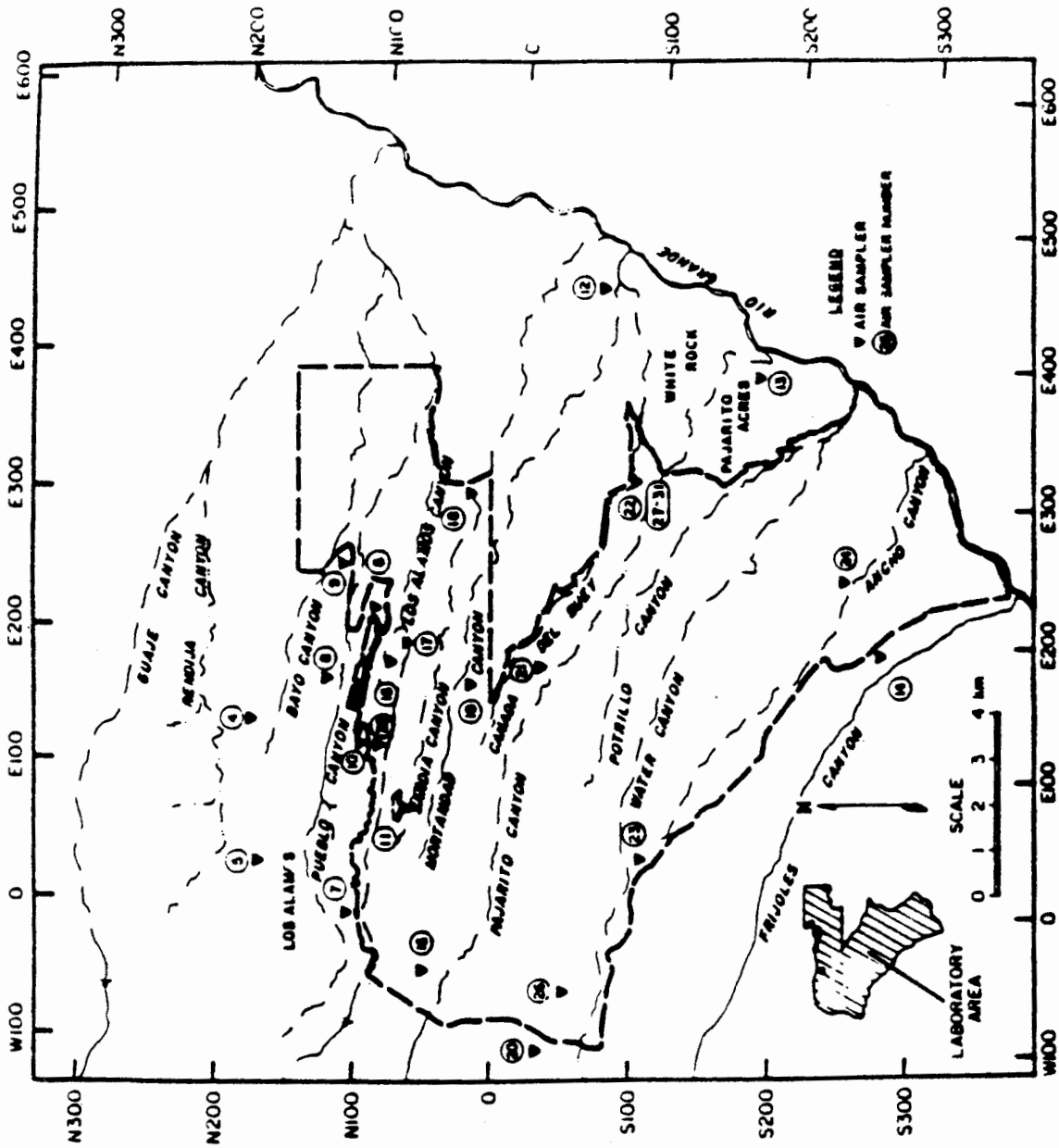


Fig. 8. Air sampler locations on or near the Laboratory site.

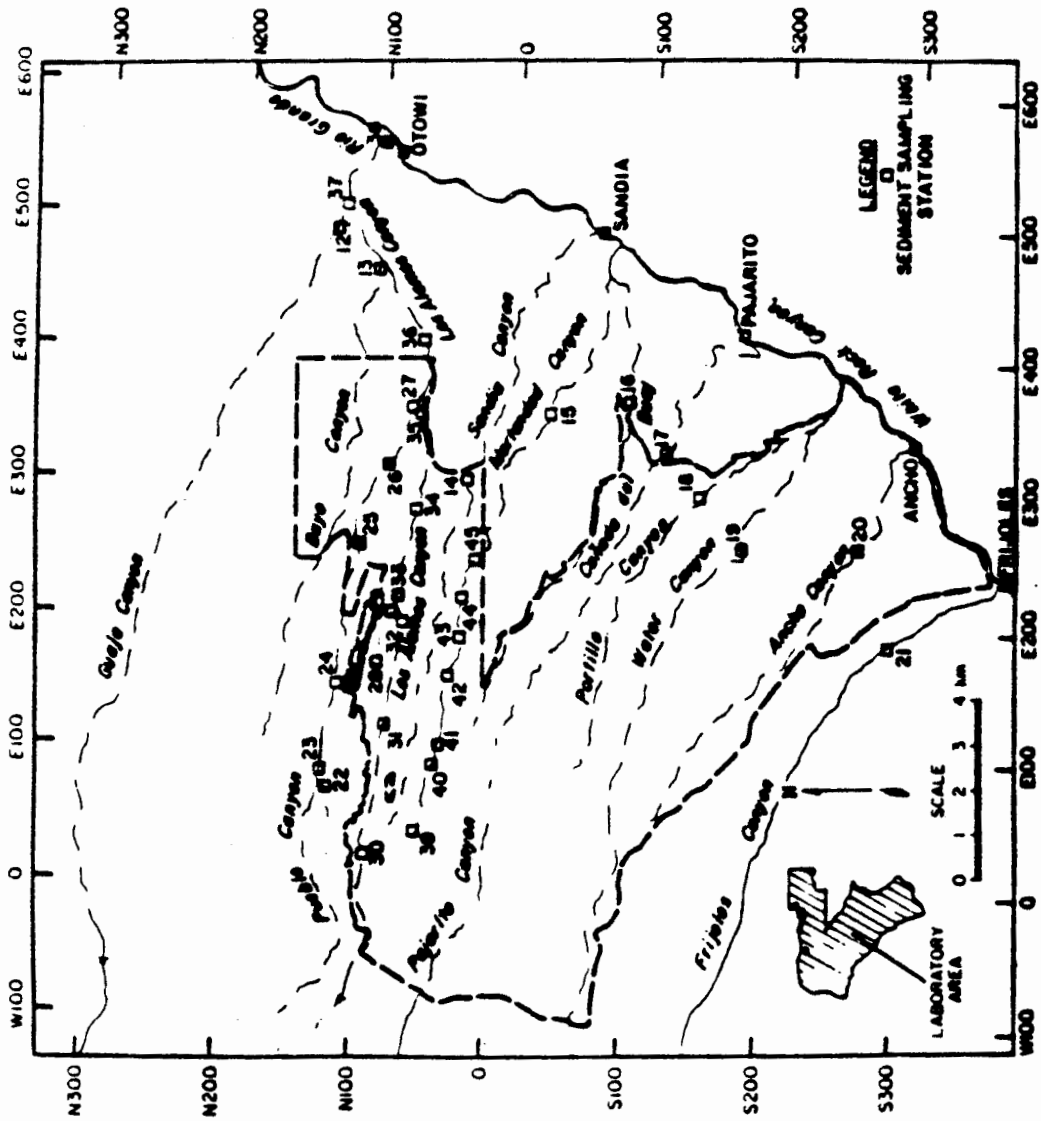


Fig. 18. Sediment sampling locations on and near the Laboratory site.

