

6/14

**ITINERARY  
EPA TOWNSITE and SWMU TOUR  
April 30, 1991**

015 /  
General

1:30 p.m.

TA-1/TA-0

Bailey Bridge Landfill (1-003)  
Drainlines and Outfalls (Ashley Pond) (1-006)  
Zia Motorpool Facilities (0-032)

TA-32

Decommissioned Site

2:00 p.m.

TA-21

Material Disposal Area A (21-014)  
New Industrial Waste Treatment Plant (21-011)  
Material Disposal Area T (21-016)  
Material Disposal Area V (21-018)  
Material Disposal Area B (21-015)  
DP Tank Farm (21-029)  
DP Road Storage Area (0-027)

TA-31

Decommissioned Site  
Central Wastewater Plant (0-019)

3:00 p.m.

TA-73

Airport Landfill (73-001)  
Incinerator/Surface Disposal (73-002)

TA-19

Decommissioned Site

TA-10

3:30 p.m.

Bayo Canyon

4:00 p.m.

TA-45

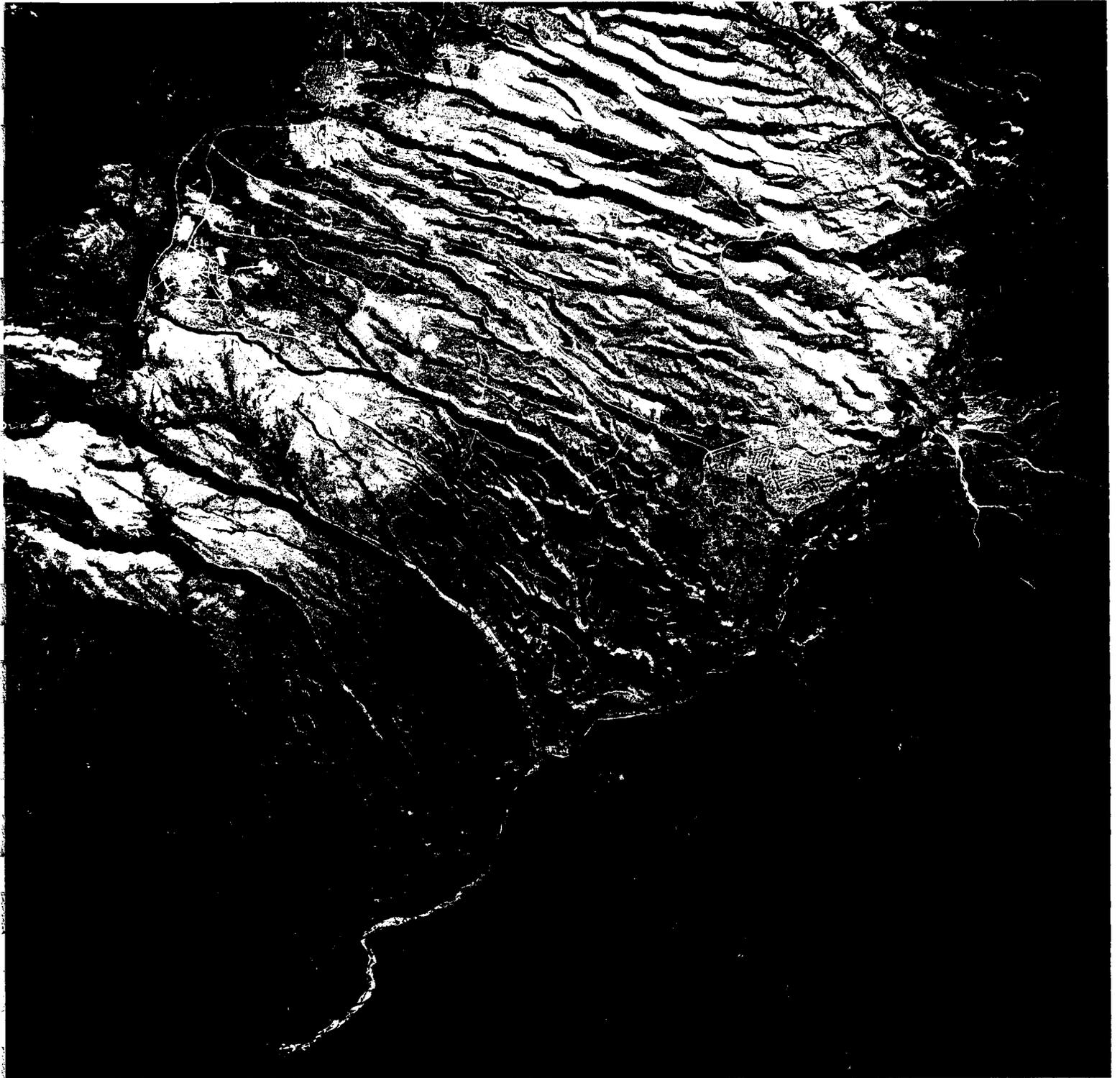
Radioactive Waste Treatment Plant (Decommissioned)

4:30 p.m.

Return to TA-59



12308





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Loop 4

East Jemez Road (truck route)

Los Alamos County

Sandoval County

Pajarito Road

54

51

18

ST. HWY 4

WHITE ROCK

Los Alamos Airport

Trinity

Bludge

W. Jemez Road

6

48

55

35

52

46

Los Alamos County

Sandoval County

40

14

37

ST. HWY. 4

28

11

ST. HWY. 4

39

33



Hendija Canyon

Bayo Canyon

Pueblo Canyon

DP Canyon

Los Alamos Canyon

Sandia Canyon

Ten Site Canyon

Morandad Canyon

Two Mile Canyon

Carrion de Valle

Cedro Canyon

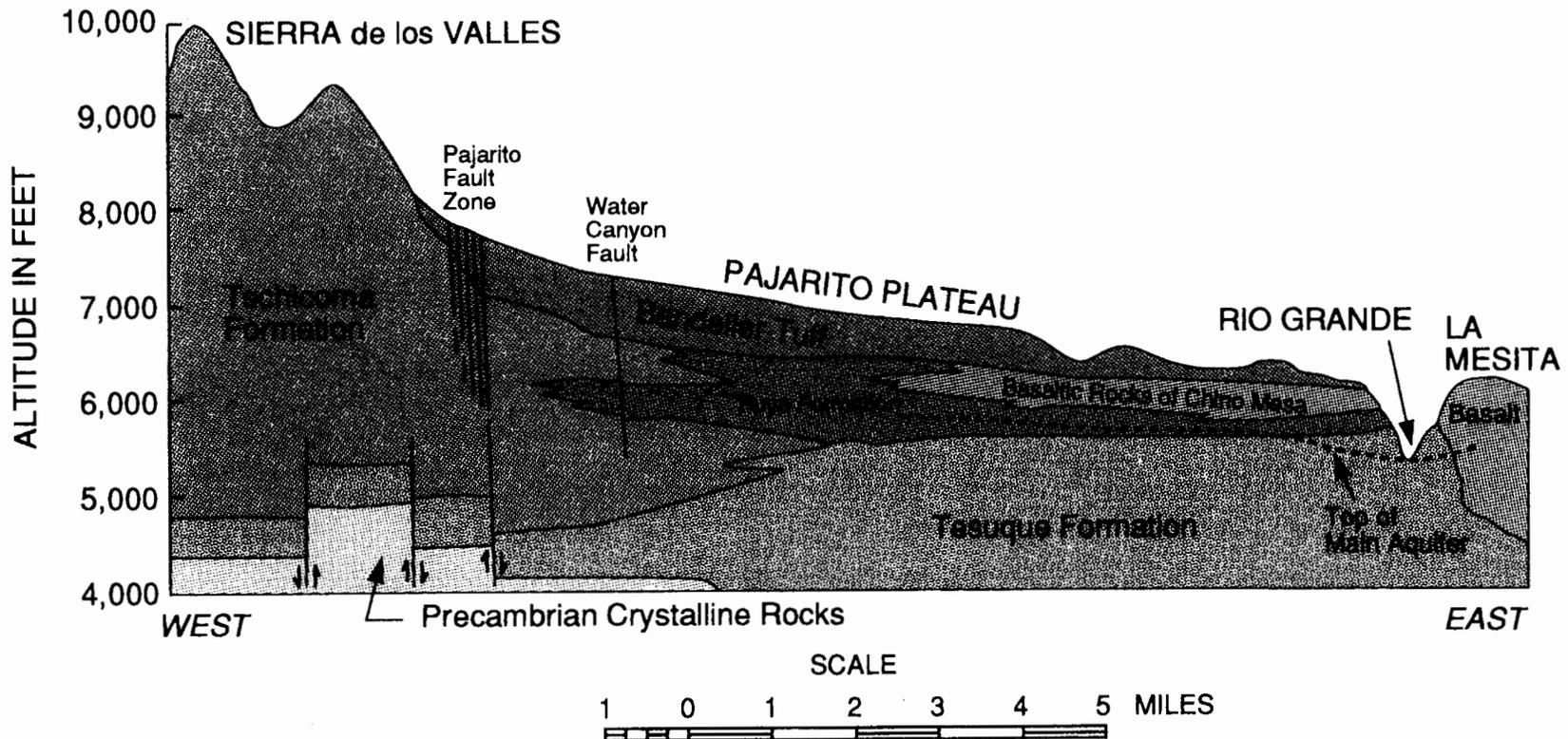
Water Canyon

Three Mile Canyon

Paravilla Canyon

Carada de Baley

# GEOLOGIC SECTION SHOWING STRATIGRAPHY AND STRUCTURE FROM THE SIERRA de los VALLES ACROSS THE PAJARITO PLATEAU TO THE RIO GRANDE



# Public Access SWMUs

Townsite - Private and County

DOE Properties

County Owned

## **RCRA Facility Investigation (RFI)**

- Re-validate radiation levels/risks
- Determine unknown hazardous materials
- RFI Work Plan 10/90 - 10/92
- RFI conducted 10/92 - 6/96
- RFI Report 3/96 - 5/98

## Corrective Measures Study

- Based on RFI results
- Compare cleanup alternatives
- Reduce risk
- Cost
- **IF** Required: 5/98 - 7/00

## **SITES ON PRIVATE AND COUNTY LAND**

- TA-01: Original Main Technical Area**
- TA-10: Bayo Canyon Site**
- TA-19: Eastgate Laboratory Facility**
- TA-26: D Site Nuclear Material Storage Vault**
- TA-31: East Receiving Yard**
- TA-32: Medical Research Laboratory**
- TA-45: WD Site Waste Treatment Plant**
- Miscellaneous**

TA-01

TA-45

TA-31

TA-32

TA-26

TA-19

TA-10

Los Alamos National Laboratory  
**Environmental Baseline**  
A Department of Energy environmental program

## TA-1 OPERATIONS AND ENVIRONMENTAL SETTING

Technical Area (TA) 1 was the first technical area at the Laboratory which housed the theoretical divisions, Laboratory administration, plutonium chemistry, physics research, and other activities beginning in November, 1942. Between 1943 and 1945, much of the theoretical, experimental, and production work in developing the atomic bomb took place in the main technical area. Beginning in the 1950s, a slow move to new facilities at TA-3 on South Mesa took place. TA-1 became inactive by 1965 and was decontaminated and demolished in stages beginning in 1966. By the late 1960's the U.S. Atomic Energy Commission (AEC) relinquished the old TA-1 area so that it could be used for residential and commercial development (DOE, 1987a).

The site of the former TA-1 lies at an elevation of approximately 7,300 feet asl. It is located on East Mesa, outside of the current operating boundary of the Laboratory in the area now incorporating parts of the Los Alamos town site both on the north and south sides of Trinity Drive. East Mesa is bounded by Pueblo Canyon on the north, Los Alamos Canyon on the south, and DP Canyon (a branch of Los Alamos Canyon) on its southeastern edge. The site is underlain by welded Bandelier Tuff. Vegetation at the location of former TA-1 is in the Ponderosa Pine overstory vegetation zone (DOE, 1979a). The soil consists of Ponga fine sandy loam, a well drained soil, typical of gently to steeply sloping mesa tops (Nyhan et al., 1978).

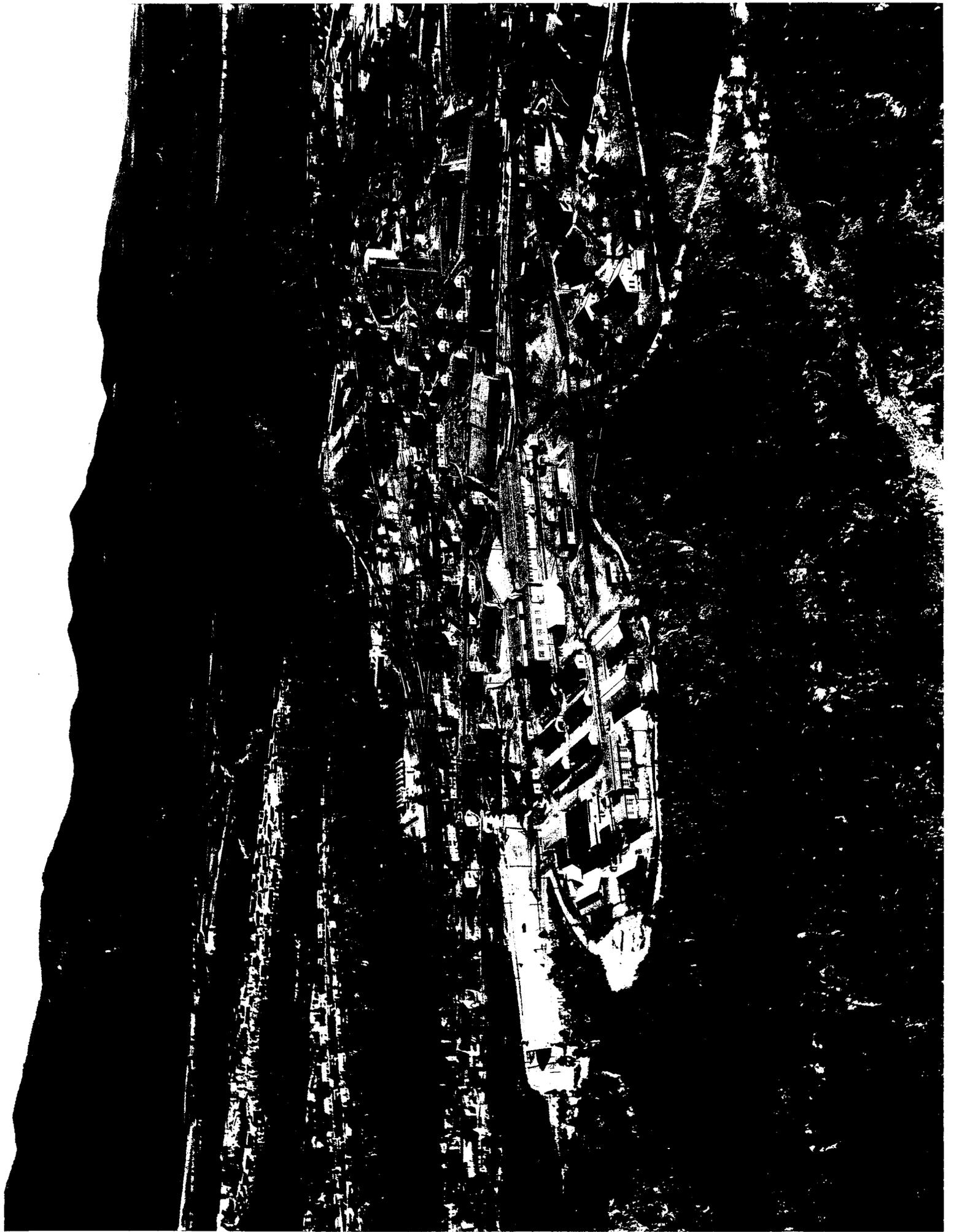
The potentiometric surface of the main aquifer in the Los Alamos area lies at 6,050 to 6,125 feet asl at the location of former TA-1. The aquifer is in the Tertiary sedimentary rocks of the Tesuque and Puye Formations. Over 1,000 feet of unsaturated tuff and volcanic rock separate the surface from the aquifer. There is little potential for downward flow from the surface because of low moisture conditions of the tuff (IT, 1987a).

LIST OF SOLID WASTE MANAGEMENT UNITS (SWMUs) IN TA-1

1-001	SEPTIC SYSTEMS
1-002	ACID WASTE LINES, OUTFALL, AND RECEIVING CANYON
1-003	LANDFILL AND SURFACE DUMPS
1-004	INCINERATORS
1-005	BENCH-SCALE INCINERATOR
1-006	DRAINLINES AND OUTFALLS
1-007	SOIL CONTAMINATION BENEATH FORMER BUILDINGS









## **DOE Property SMWUs: TAs - 0, 19, 26, 73**

- Most properties owned by DOE
- Some areas released for private use
- No surface debris
- Surveys conducted indicate radiation levels at background

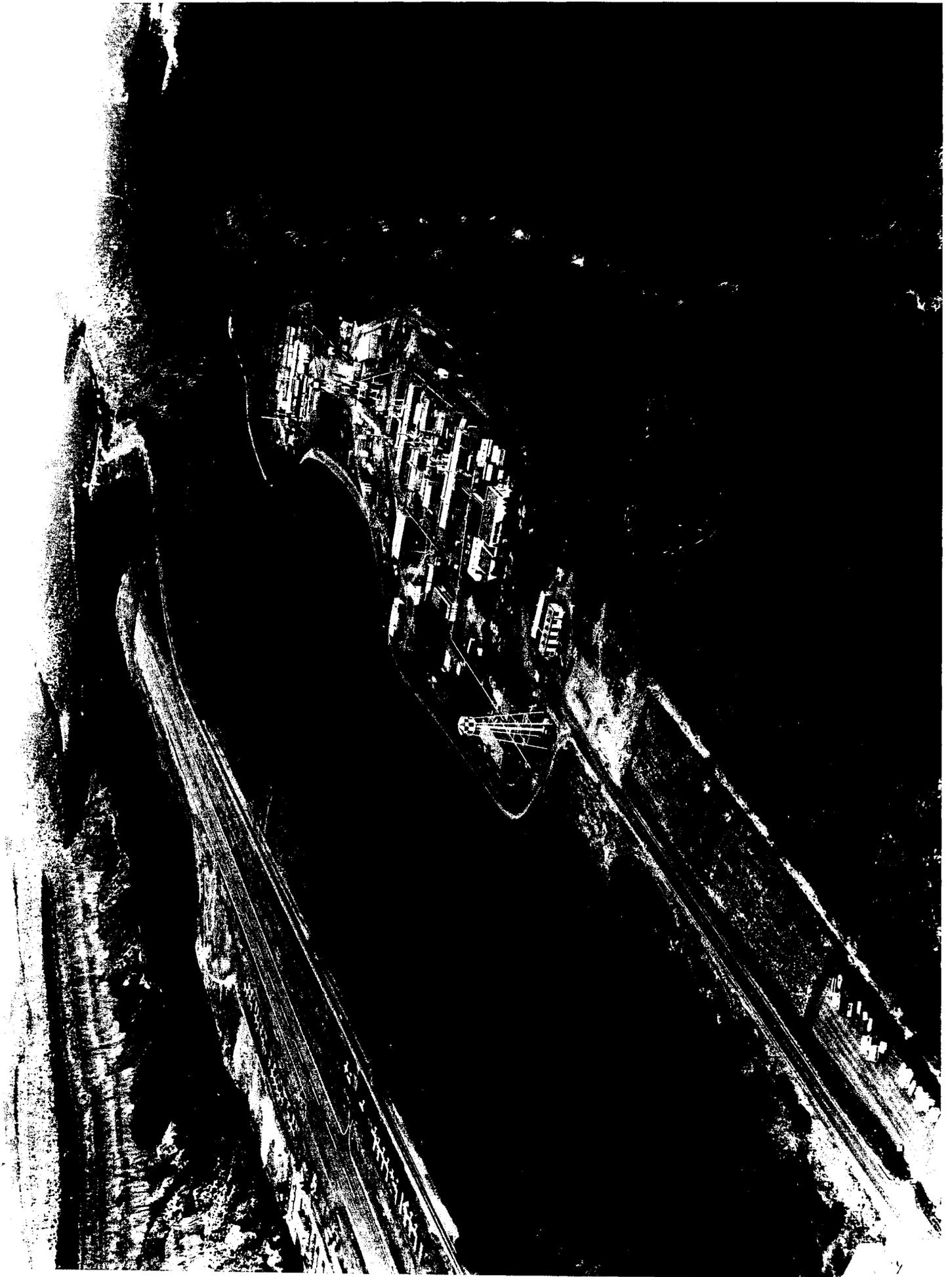
# DOE Property and Miscellaneous SWMUs

TA-0, Miscellaneous Locations

TA-19, Eastgate Laboratory Facility

TA-26, "D" Site - Nuclear Material  
Storage Vault

TA-73, Airport Landfill Area



**TA-0**  
**OPERATIONS AND ENVIRONMENTAL SETTING**

Technical Area (TA) 0 includes all Los Alamos-related operations and sites outside the current and former Laboratory boundaries. Because of the special conditions involved in designating a SWMU as belonging to TA-0 and because of the varying topography and environmental conditions of TA-0, pertinent environmental information is provided in the unit descriptions that follow. SWMUs that had been previously identified in TA-0, but are now in a designated technical area are discussed in detail in the appropriate technical area discussion in this report. The SWMU's that have been renumbered are shown on Table I-1 in the introduction to this report.

LIST OF SOLID WASTE MANAGEMENT UNITS (SWMUs) IN TA-0

0-001	SURFACE IMPOUNDMENTS
0-002	USED OIL CONTAINER STORAGE AREA (renumbered)
0-003	DECOMMISSIONED CONTAINER STORAGE AREA
0-004	ACTIVE CONTAINER STORAGE AREA
0-005	MORTANDAD CANYON LANDFILL
0-006	ACTIVE LANDFILL (renumbered)
0-007	INACTIVE AIRPORT LANDFILL (renumbered)
0-008	NORTH MESA SURFACE DISPOSAL
0-009	MATERIAL DISPOSAL AREA M (renumbered)
0-010	SURFACE DISPOSAL
0-011	MORTAR IMPACT AREAS
0-012	WESTERN STEAM PLANT
0-013	TWO-MILE MESA INCINERATOR (renumbered)
0-014	AIRPORT INCINERATOR / SURFACE DISPOSAL (renumbered)
0-015	ACTIVE FIRING RANGE
0-016	INACTIVE FIRING RANGE
0-017	WASTE LINES
0-018	ACTIVE WASTEWATER TREATMENT PLANTS
0-019	DECOMMISSIONED WASTEWATER TREATMENT PLANT
0-020	GARBAGE TRUCK AND CAN CLEANING (renumbered)
0-021	INACTIVE AIRPORT SEPTIC SYSTEMS (renumbered)
0-022	DECOMMISSIONED SEPTIC SYSTEM (renumbered)
0-023	SOIL CONTAMINATION / OPERATIONAL RELEASE (renumbered)
0-024	CISTERN
0-025	TANK MESA LANDFILL
0-026	GUN MOUNT LANDFILL
0-027	DP ROAD STORAGE AREA
0-028	LOS ALAMOS COUNTY RECREATION AREAS
0-029	LEAKAGE FROM PCB TRANSFORMERS
0-030	SEPTIC SYSTEMS
0-031	SOIL CONTAMINATION BENEATH FORMER SERVICE STATIONS
0-032	SOIL CONTAMINATION UNDER FORMER MOTORPOOL FACILITY
0-033	SOIL CONTAMINATION BENEATH FORMER ZIA WAREHOUSES

**TA-19**  
**OPERATIONS AND ENVIRONMENTAL SETTING**

Former Technical Area (TA) 19 was known as the East Gate Laboratory. The site was used for a variety of experiments, some of which utilized radioactive sources and chemicals. Several buildings were removed in 1956. The remaining structures were transferred to the DOE Los Alamos Area Office (LAAO) in 1962 for Civil Defense purposes. LAAO later authorized the Los Alamos Radio Club to use the site. All buildings at the site have been removed (DOE, 1987a). The former site of TA-19 lies within the current boundaries of TA-72. The eastern end of this former technical area is within Santa Fe County.

The property on which TA-19 was located is about 6,910 feet asl. It is located on the eastern end of East Mesa, east of the Los Alamos Airport. The mesa is bounded on the north by Pueblo Canyon and on the south by a small tributary of Pueblo Canyon. Canyon walls are steep in this area. TA-19 lies on welded Bandelier Tuff. The area is in the Pinon-Juniper overstory vegetation zone. Soils have not been surveyed in this area.

At TA-19, the potentiometric surface of the main aquifer in the Los Alamos area lies between about 5,860 feet asl. Over 1,000 feet of unsaturated tuff and volcanic rock separate the surface from the aquifer. There is little potential for downward flow from the surface because of the low moisture conditions of the tuff (IT, 1987a).

LIST OF SOLID WASTE MANAGEMENT UNITS (SWMUs) IN TA-19

19-001	SEPTIC SYSTEM
19-002	SURFACE DISPOSAL
19-003	DRAINLINE AND OUTFALL

## TA-26

### OPERATIONS AND ENVIRONMENTAL SETTING

Former Technical Area (TA) 26, D Site, operations consisted of a storage vault for nuclear materials, a sentry station, and a guard tower. The buildings were removed or demolished by 1966. The technical area was located on the north boundary of the Laboratory south of and adjacent to East Road on the narrow mesa between Los Alamos Canyon on the south and Pueblo Canyon to the north (DOE, 1987a). The site is within the current boundaries of TA-73.

The site of former TA-26 lies at an elevation of about 6,980 to 7,060 feet asl in the Pinon-Juniper overstory vegetation zone. Soil consists of Hackroy sandy loam. The potentiometric surface of the main aquifer in the Los Alamos region lies at about 5,850 feet asl at the site. Over 1,000 feet of unsaturated tuff and volcanic rock separate the surface from the aquifer. There is little potential for downward flow from the surface because of the low moisture conditions of the tuff (IT, 1987a).

LIST OF SOLID WASTE MANAGEMENT UNITS (SWMUs) IN TA-26

26-001	CANYONSIDE DISPOSAL AREA
26-002	SUMP SYSTEM
26-003	SEPTIC SYSTEM

## TA-73

### OPERATIONS AND ENVIRONMENTAL SETTING

Technical Area (TA) 73 operations currently include the Los Alamos Airport (formerly designated as TA-0) and some building debris disposal. The airport was built on a landfill that was used by DOE, its predecessors, and by Los Alamos County. TA-73 also includes the location of former TA-26. SWMUs previously identified in this area that were designated TA-0 are renumbered to TA-73 in this revision. See Table I-1 in the introduction to this report for renumbered SWMUs.

The elevation of TA-73 ranges between 6,600 feet asl and 7,200 feet asl. The technical area lies at the northern boundary of the Laboratory. It includes the eastern edge of East Mesa and half of DP Canyon. East Mesa is bounded by Pueblo Canyon on the north and DP Canyon on the south. DP Canyon is a branch canyon to Los Alamos Canyon. The area is underlain by welded Bandelier Tuff. TA-73 soil consists of Hackroy sandy loam on the mesa top, steep rock outcrop on the northern DP Canyon wall, and Totavi gravelly loamy sand on the bottom of DP Canyon. Vegetation is in the Pinon-Juniper and Ponderosa Pine/Pinon-Juniper overstory vegetation zones (LANL, 1989).

The potentiometric surface of the main aquifer in the Los Alamos area lies between 5,860 and 5,940 feet asl at TA-73. Over 1,000 feet of unsaturated tuff and volcanic rock separates the surface of the mesa from the underlying aquifer. Studies have shown that the potential for downward movement of water from the surface is very low because of the hydraulic properties of the tuff and its very low moisture content (IT, 1987a).

LIST OF SOLID WASTE MANAGEMENT UNITS (SWMUs) IN TA-73

73-001	LANDFILL
73-002	AIRPORT INCINERATOR / SURFACE DISPOSAL
73-003	GARBAGE TRUCK AND CAN CLEANING
73-004	INACTIVE SEPTIC SYSTEMS
73-005	SURFACE DISPOSAL
73-006	AIRPORT BUILDING OUTFALLS

## **County Properties: TAs - 10, 31, 32, 45**

- All property released to Los Alamos County
- Cleanup activities conducted 1954 - 1988
- Residual surface contamination
- Institutional controls
- No health or safety risk

# **County Owned Property SWMUs**

TA-10, Bayo Canyon

TA-31, East Receiving Yard

TA-32, Medical Research Laboratory

TA-45, "WD" Site Waste Treatment Plant

**TA-10**  
**OPERATIONS AND ENVIRONMENTAL SETTING**

Former Technical Area (TA) 10 was decommissioned and decontaminated in the early 1960's. Its location lies outside the northeastern corner of the Laboratory and is presently owned by Los Alamos County with restricted use provisions suggested by DOE. The area was used as a firing site and, for a period of years, included a chemical laboratory (DOE, 1987a). Radioactive materials, acids, metals, and laboratory wastes were disposed of or released.

TA-10 was decommissioned from 1960 to 1963. It was recognized at the time of decommissioning that some radioactive materials probably remained in the canyon. Consequently, several follow-up surveys were conducted over the years. In 1976, TA-10 was reevaluated as part of the Formerly Utilized Sites Remedial Action Program (FUSRAP). Investigations and subsequent excavation during this program left unacceptable levels of a radioactivity between 10 and 40 feet below the pits (see 10-003), but acceptable radioactivity levels at depths less than 10 feet. In 1983, concrete monuments were installed delineating a "Designated Restricted Area."

The site of former TA-10 lies along the streambed of Bayo Canyon at about 6,600 to 6,800 feet asl. The bedrock in the area is a non-welded member of the Bandelier Tuff. The site lies in the Pinon-Juniper overstory vegetation zone. Soils have not been surveyed in this area.

The potentiometric surface of the main aquifer in the Los Alamos area is at 5,850 feet asl at the site of TA-10. Over 700 feet of unsaturated tuff, basalt, other volcanic rocks, and conglomerate separate the surface from the ground water table. There is little potential for downward flow of surface water through the unsaturated zone to the aquifer (IT, 1987a). However, because a stream runs in Bayo Canyon occasionally, surface water presents a transport mode for any contamination that may be present at the site.

LIST OF SOLID WASTE MANAGEMENT UNITS (SWMUs) IN TA-10

10-001	FIRING SITES
10-002	DISPOSAL PITS
10-003	LIQUID DISPOSAL COMPLEX
10-004	SEPTIC SYSTEMS
10-005	SURFACE DISPOSAL AREA
10-006	BURN SITES
10-007	LANDFILL

**TA-31**  
**OPERATIONS AND ENVIRONMENTAL SETTING**

Technical Area (TA) 31, known as the east receiving yard, was mainly a receiving area and warehousing operation, including drum storage. The buildings were removed in 1954 (DOE, 1987a). It is presently outside the current laboratory boundary, near the west end of the Los Alamos Airport. The area is now built over with private housing in what is called the "Eastern Area".

The site of former TA-31 is located at an elevation of about 7,200 feet asl. The mesa on which it is located, East Mesa, is bounded on the north by Pueblo Canyon and on the south by a branch of Los Alamos Canyon. Canyon walls are steep slopes or cliffs in this area. The area is underlain by welded Bandelier Tuff, in the Ponderosa Pine/Pinon-Juniper overstory vegetation zone. Soils have not been surveyed in the area, but they probably consist of Hackroy sandy loam.

At the location of TA-31, the potentiometric surface of the main aquifer in the Los Alamos region lies at about 5,950 feet asl. Over 1,000 feet of unsaturated tuff and volcanic rock separate the surface from the aquifer. There is little potential for downward flow from the surface because of the low moisture conditions of the tuff (IT, 1987a).

LIST OF SOLID WASTE MANAGEMENT UNITS (SWMUs) IN TA-31

31-001

SEPTIC SYSTEM



## TA-32

### OPERATIONS AND ENVIRONMENTAL SETTING

Former Technical Area (TA) 32, the medical research facility, was located outside the current Laboratory boundaries on the south side of Trinity Drive. The Los Alamos County Department of Roads now occupies the space. The Technical Area included three laboratories, an office building, and two other buildings. It is unknown when these buildings were removed. Work at the site included biological research involving radionuclides (DOE, 1987a).

The former site of TA-32 is located at about 7,260 feet asl. The mesa on which it is located, East Mesa, is bounded on the north by Pueblo Canyon and on the south by a branch of Los Alamos Canyon. Canyon walls are steep slopes or cliffs in this area. The area is underlain by welded Bandelier Tuff, in the Ponderosa Pine/Pinon-Juniper overstory vegetation zone. The soil consists of Pogna fine sandy loam (Nyhan et al., 1978).

At the site of TA-32, the potentiometric surface of the main aquifer in the Los Alamos region lies at about 6,050 feet asl. Over 1,000 feet of unsaturated tuff and volcanic rock separate the surface from the aquifer. There is little potential for downward flow from the surface because of the low moisture conditions of the tuff (IT, 1987a).

LIST OF SOLID WASTE MANAGEMENT UNITS (SWMUs) IN TA-32

32-001  
32-002

INCINERATOR  
SEPTIC SYSTEM

**TA-45**  
**OPERATIONS AND ENVIRONMENTAL SETTING**

Former Technical Area (TA) 45 was included a plant to treat liquid industrial radionuclide-contaminated waste; treated effluent was discharged to Acid Canyon. It was built by 1951. The site is now outside the Laboratory boundary in the Los Alamos townsite. The plant and outfalls were shut down between 1963 and 1966 (DOE, 1987a).

The location of the TA-45 outfall is near the present intersection of Canyon Road and Central Avenue. Acid Canyon is a tributary to Pueblo Canyon, which joins Los Alamos Canyon. The areas of Acid, Pueblo, and Los Alamos Canyons between the Rio Grande and the TA-45 site are included with TA-45 as part of an area to be investigated for its potential impacts from the SWMUs identified at the former TA-45. The TA-45 site is at an elevation of about 7,240 feet asl. It lies on welded Bandelier Tuff, in the Ponderosa Pine overstory vegetation zone. Soils have not been surveyed in this area.

At the site, the potentiometric surface of the main aquifer in the Los Alamos region lies at about 6,100 feet asl. Over 1,000 feet of unsaturated tuff and volcanic rock separate the surface from the aquifer. There is little potential for downward flow from the surface because of the low moisture conditions of the tuff (IT, 1987a).

LIST OF SOLID WASTE MANAGEMENT UNITS (SWMUs) IN TA-45

45-001	RADIOACTIVE WASTEWATER TREATMENT FACILITY
45-002	VEHICLE DECONTAMINATION FACILITY
45-003	DECOMMISSIONED WASTE LINES
45-004	OUTFALLS

**TA-21**  
**OPERATIONS AND ENVIRONMENTAL SETTING**

Technical Area (TA) 21 is a complex facility incorporating many varied activities in separate buildings. These activities include (DOE, 1987a):

- Plumbing and electrical repair
- Preparation of cold salts for plutonium metal production
- Electronic equipment repair
- Geophysical research
- Labeled compounds preparation for biological/health research and biological studies
- Radioactive waste treatment
- Waste capacitors, transformers, and oils storage
- Tritium handling, storage, and usage research
- Basic research
- TRU chemistry
- Storage

Several laboratory material disposal areas exist at TA-21. The area is not slated for development because of the problems associated with its location. Several structures are currently being decontaminated and destroyed.

TA-21 lies at elevations between 6,680 and 7,220 feet asl. It is located on the eastern end of South Mesa, which is bifurcated by DP Canyon, a branch canyon of Los Alamos Canyon, separating TA-21 from the Los Alamos Airport to the north. The mesa is bounded on the south by Los Alamos Canyon. Canyon walls are steep or cliffs in this area. TA-21 lies on welded Bandelier Tuff in the Ponderosa Pine/Pinon-Juniper and Pinon-Juniper overstory vegetative zones. Soil is comprised of Hackroy sandy loam, Totavi gravelly loam sand, and rock outcrop (Nyhan et al., 1978).

At TA-21, the potentiometric surface of the main aquifer in the Los Alamos are lies at about 5,870 to 5,990 feet asl. Over 1,000 feet of unsaturated tuff and volcanic rock separate the surface from the aquifer. There is little potential for downward flow from the surface because of the low moisture conditions of the tuff (IT, 1987a; Purtymun, 1974).

## **TA-21**

### **Activities**

- 40-Acre Site First Occupied in 1945
- DP West Used for Plutonium Processing 1945-1978
- DP East Houses Tritium Systems Test Assembly



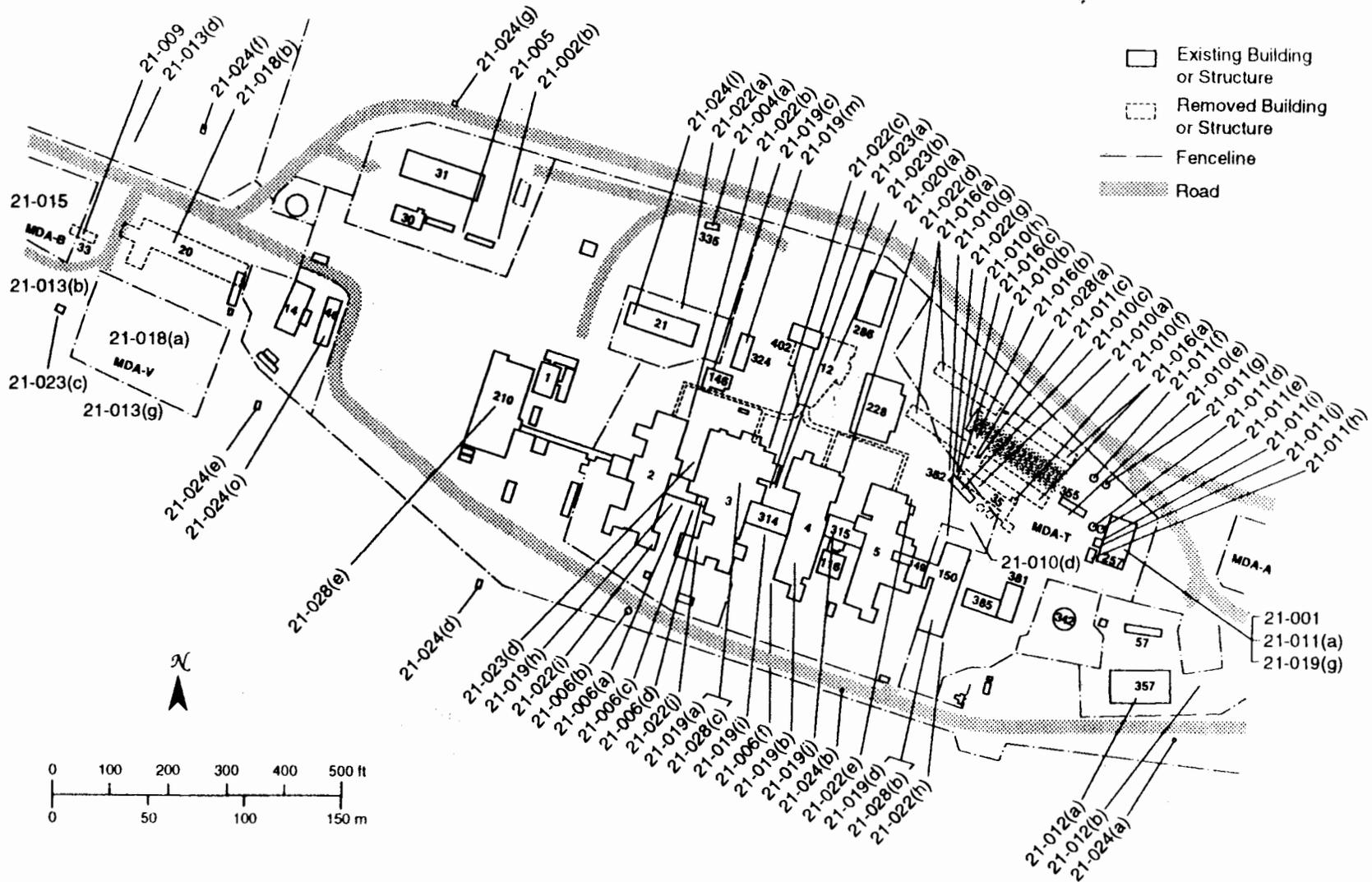
## **TA-21 (Continued)**

### **Regulatory Units**

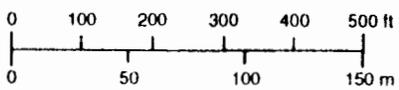
- 112 SWMUs in the Following Categories:
  - material disposal areas
  - surface units (e.g., container storage areas, stack emissions)
  - Subsurface units (e.g., sumps, seepage pit)
  - outfalls
  - D&D units

LIST OF SOLID WASTE MANAGEMENT UNITS (SWMUs) IN TA-21

21-001	RADIOACTIVE WASTE CONTAINER STORAGE AREA
21-002	INACTIVE CONTAINER STORAGE AREAS
21-003	PCB STORAGE AREA
21-004	ABOVEGROUND TANKS AND DRAINLINES
21-005	ACID PIT
21-006	UNDERGROUND SEEPAGE PITS
21-007	SALAMANDERS
21-008	INCINERATOR
21-009	WASTE TREATMENT LABORATORY
21-010	INDUSTRIAL LIQUID WASTE TREATMENT FACILITY
21-011	NEW INDUSTRIAL WASTE TREATMENT PLANT
21-012	DRY WELLS
21-013	SURFACE DISPOSAL
21-014	MATERIAL DISPOSAL AREA A
21-015	MATERIAL DISPOSAL AREA B
21-016	MATERIAL DISPOSAL AREA T
21-017	MATERIAL DISPOSAL AREA U
21-018	MATERIAL DISPOSAL AREA V
21-019	FILTER HOUSES/EXHAUST STACKS SOIL CONTAMINATION
21-020	DECOMMISSIONED FILTER HOUSES
21-021	STACK EMISSIONS
21-022	ACID WASTE LINES AND SUMPS
21-023	DECOMMISSIONED SEPTIC SYSTEMS
21-024	INACTIVE SEPTIC SYSTEMS / OUTFALLS
21-025	OFF-GAS SYSTEM
21-026	WASTEWATER TREATMENT PLANT AND OUTFALL
21-027	SURFACE DISCHARGE
21-028	ACTIVE CONTAINER STORAGE AREAS
21-029	DP TANK FARM

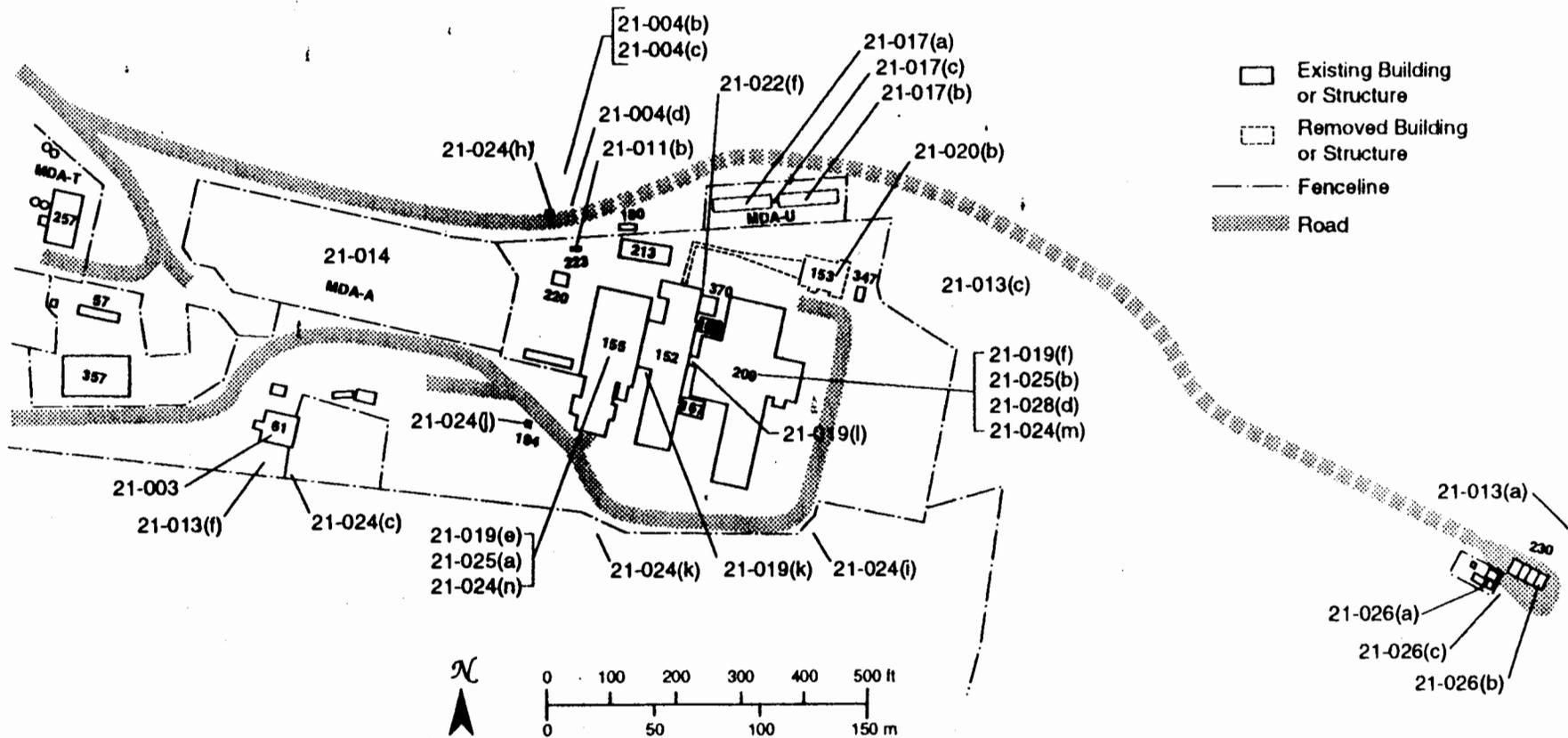


- Existing Building or Structure
- Removed Building or Structure
- Fenceline
- Road



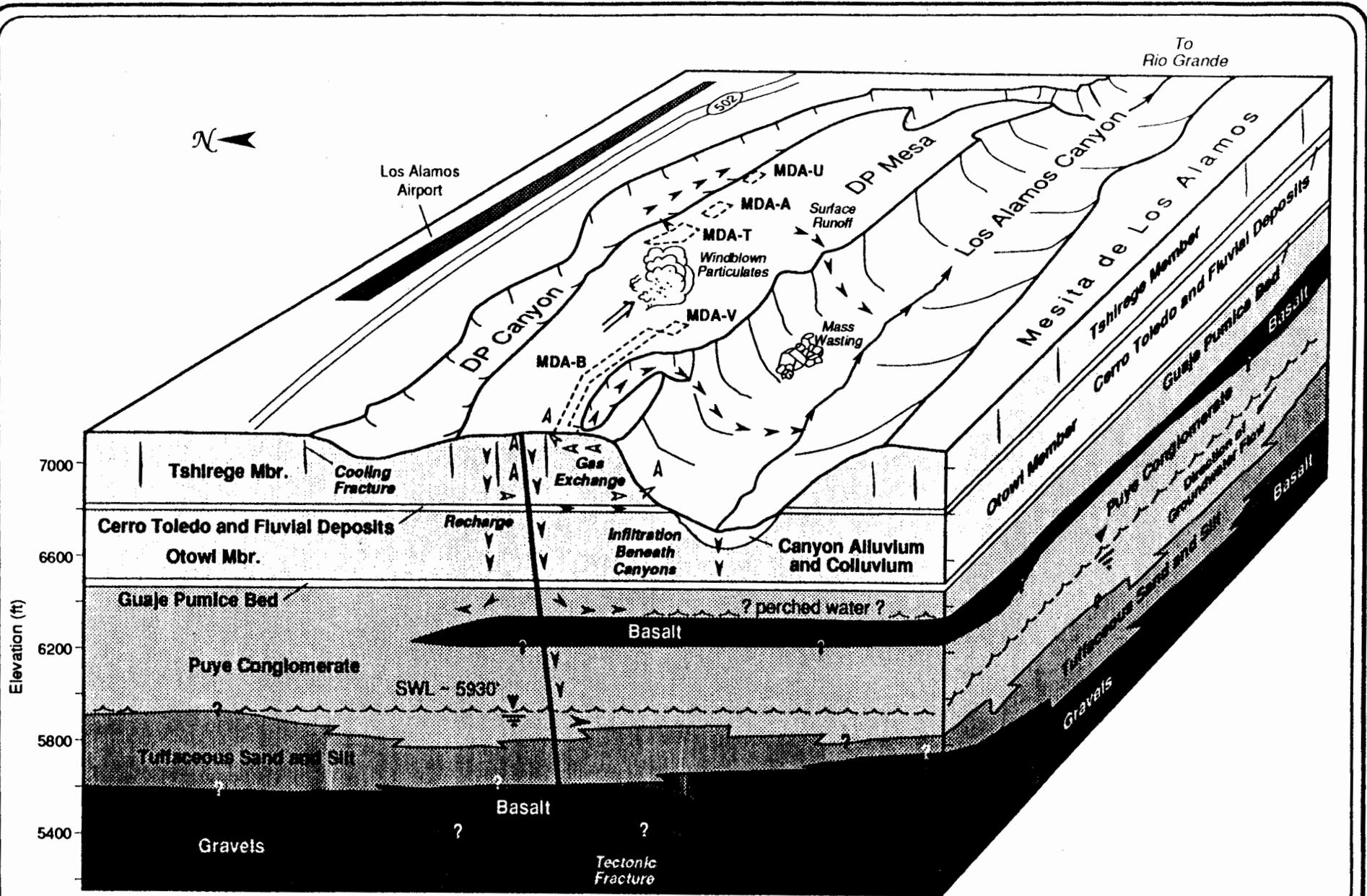
**Environmental Restoration**

**Los Alamos**



**Environmental Restoration**

**Los Alamos**



Three-dimensional conceptual model of TA-21.

Environmental Restoration

Los Alamos

