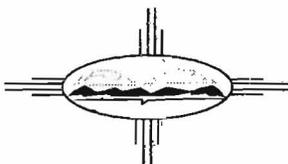


TA-15

---

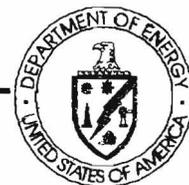
**PRS 15-012(b)**

**Wash Area  
TA-15, R-Site  
SRS Score = 46  
HSWA Permit**



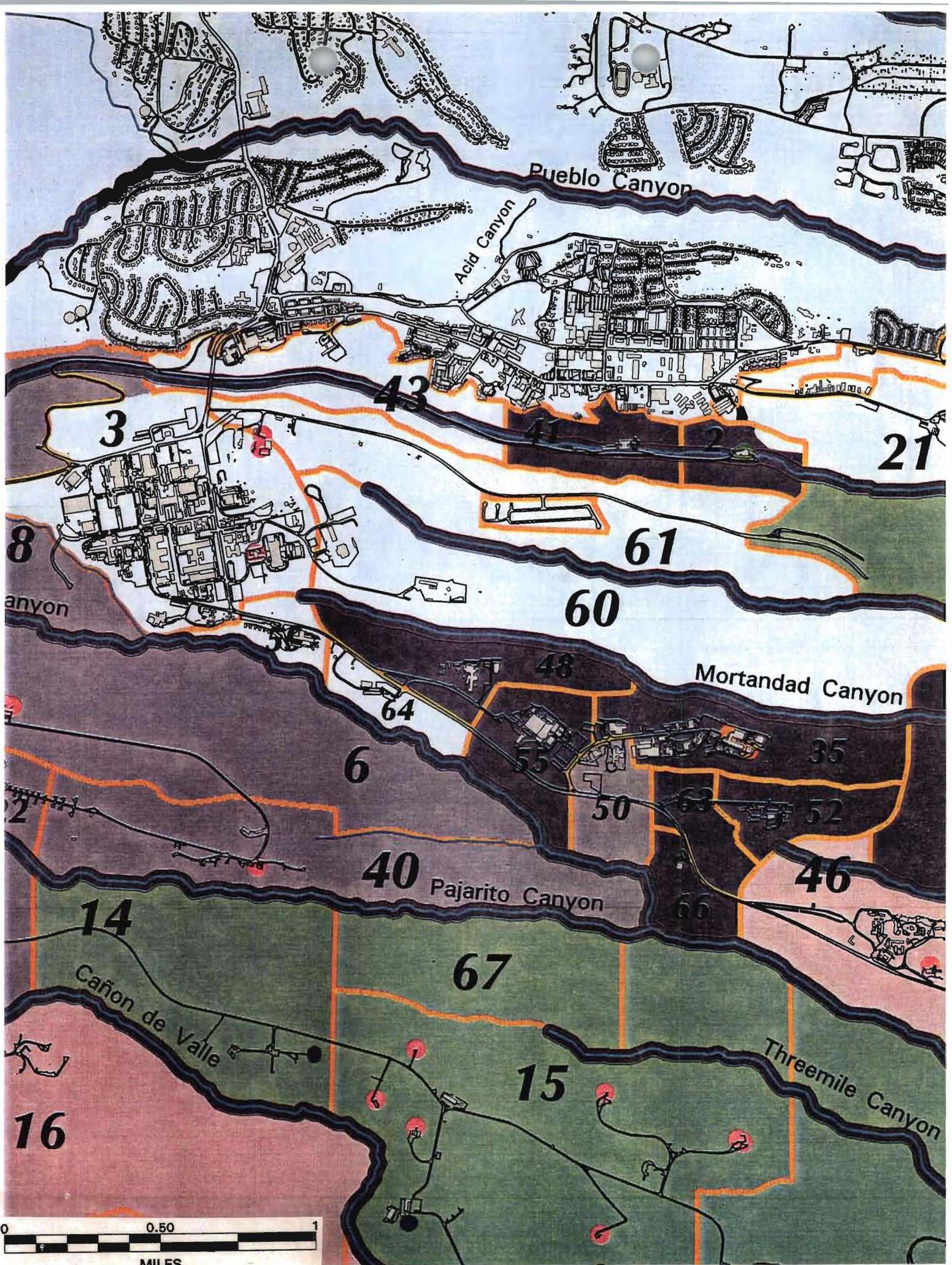
---

*Los Alamos National Laboratory  
Environmental Restoration Project*

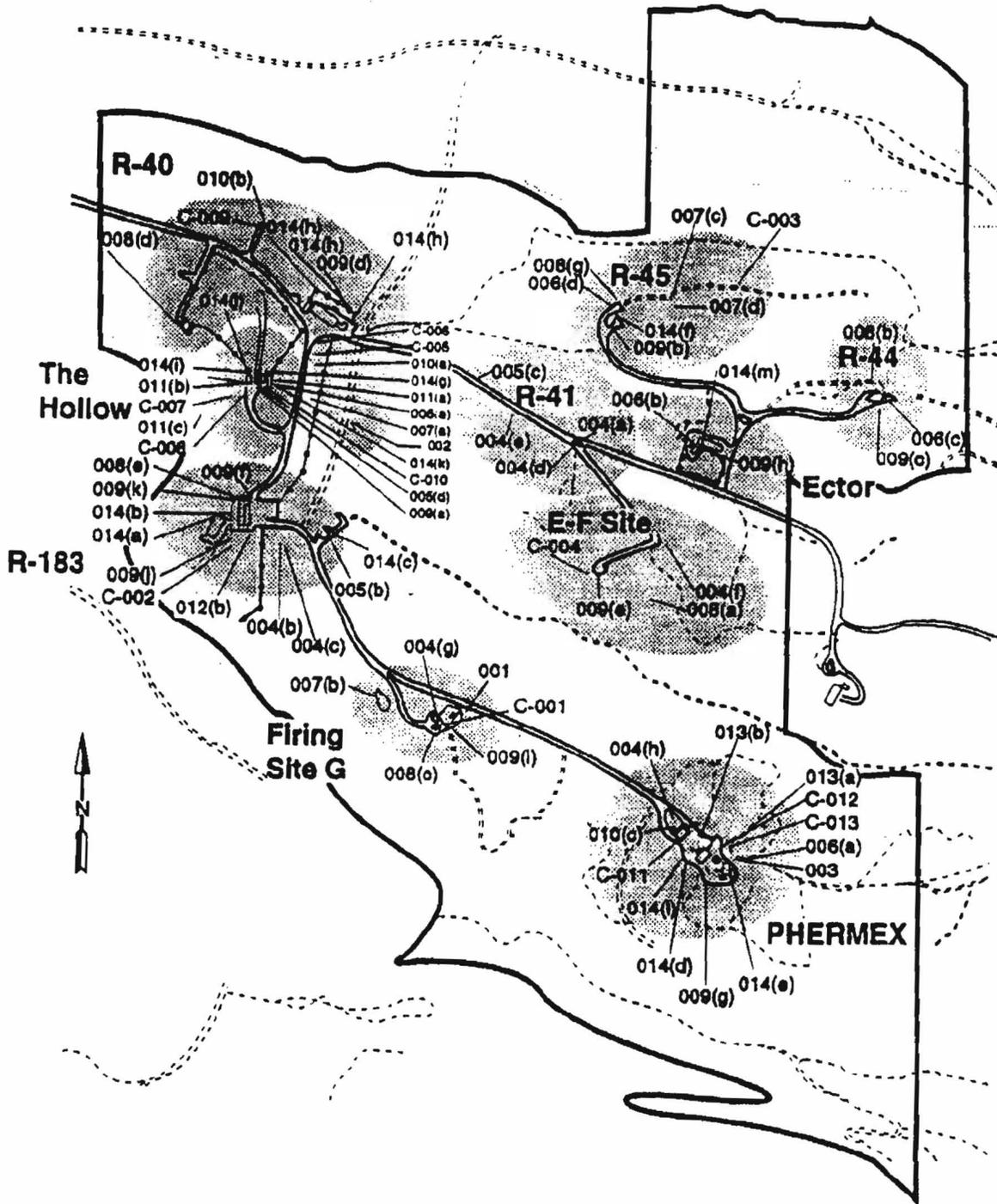


VG-97-008 (1)

2/10/99



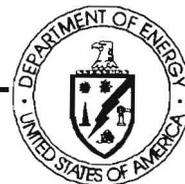
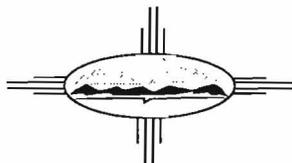
# TA - 15



# PRS Description

---

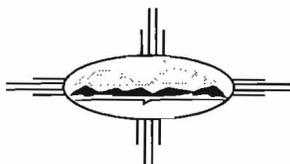
- **Wash Area - sunken, soil-berm approximately 20 ft. x 60 ft.**
  - contained wash water (aqueous) from cleaning heavy-walled spheres used in explosive testing
  - surveyed with hand-held radiation meters, found activity greater than background
- **Used from late 1970's to mid-1980**
- **Land use scenario - industrial**
- **Location - in secured area**



## **PRS Description (concluded)**

---

- **Nearest water course approximately 1/4 mile** *upgradient*
- **Land slope <2%**
- **RFI report results dated November 1995**



*Los Alamos National Laboratory  
Environmental Restoration Project*



VG-97-008 (3)

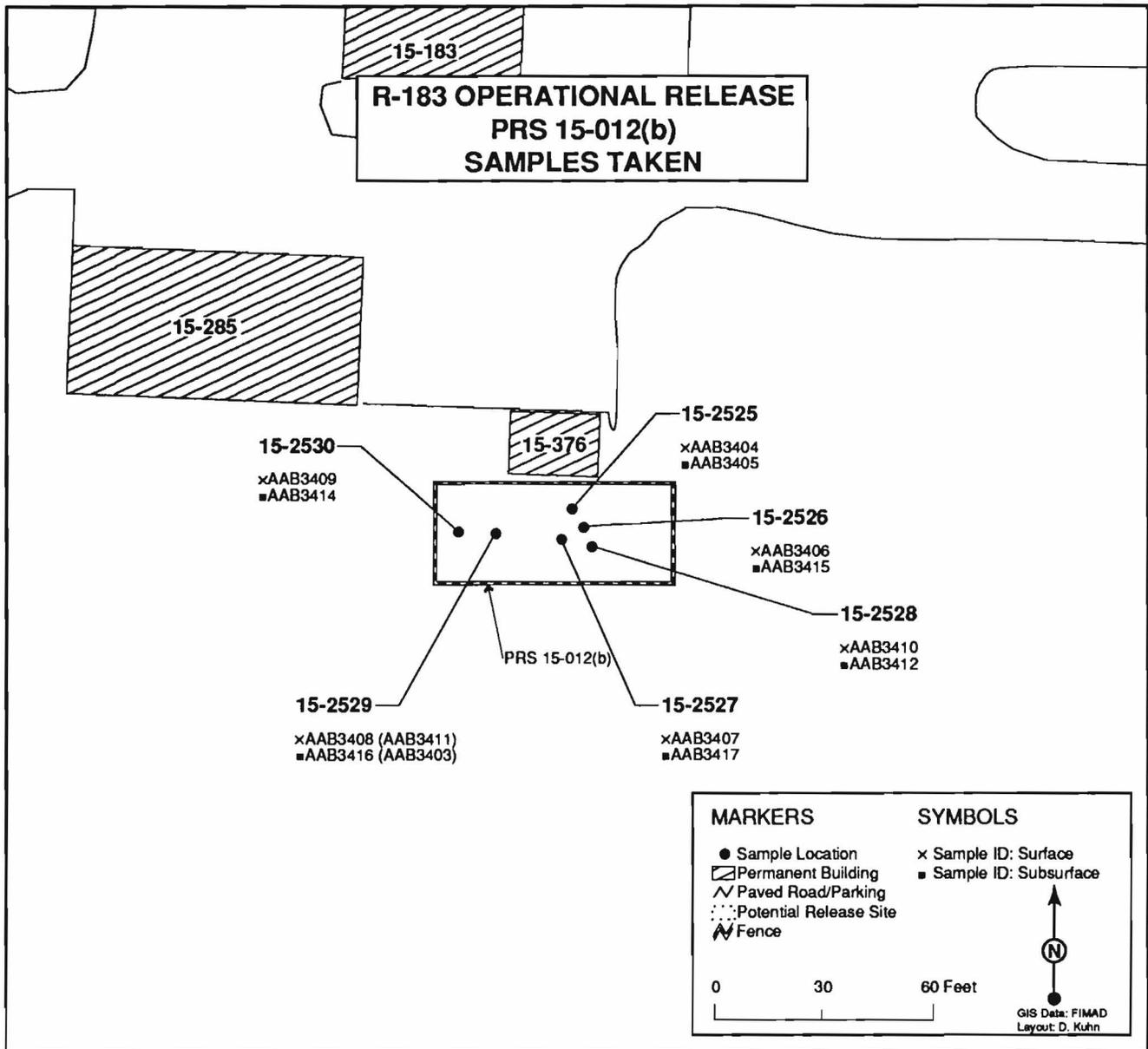


PRS 15-012(b) Wash Area



PRS 15-012(b) Wash Area

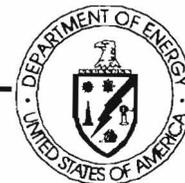
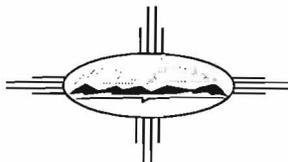




# Characterization

---

- **Screened for HE using HE Spot Test Kit**
- **Screened for radioactivity (alpha, beta, and gamma)**
- **Twelve samples collected from six locations at 0 to 6 in. and 18 to 24 in. depth**
- **Four samples submitted to fixed lab based on screening results [mobile Rad van and chemistry van (XRF)] in accordance with approved work plan**
- **Analyzed for metals, total uranium**



# Analytical Results

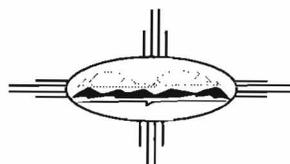
R-183 OPERATIONAL RELEASE PRS 15-012(b)

**Inorganic Analytes With Concentrations Greater Than Background UTL**

| Analyte   | Location ID | Sample ID | Sample Value (mg/kg) | SAL (mg/kg) | UTL (mg/kg) | Depth (Inches) | > SAL |
|-----------|-------------|-----------|----------------------|-------------|-------------|----------------|-------|
| Beryllium | 15-2526     | AAB3406   | 8.2                  |             |             | 0-6            | X     |
|           | 15-2527     | AAB3407   | 2.7                  | 0.14        |             | 18-24          | X     |
|           | 15-2527     | AAB3417   | 27.6                 | N/A         | 1.95        | 0-6            | X     |
|           | 15-2529     | AAB3416   | 6.3                  |             |             | 0-6            | X     |
| Copper    | 15-2527     | AAB3417   | 61.1                 | 2800        | 15.5 30.7   | 0-6            |       |
| Lead      | 15-2526     | AAB3406   | 27.3                 |             |             | 0-6            |       |
|           | 15-2527     | AAB3407   | 23.8                 |             |             | 18-24          |       |
|           | 15-2527     | AAB3417   | 180                  | 400         | 23.3        | 0-6            |       |
|           | 15-2529     | AAB3416   | 104                  |             |             | 0-6            |       |
| Mercury   | 15-2527     | AAB3407   | 0.16                 | 23          | 0.1         | 18-24          |       |

**Radionuclides With Concentrations Greater Than Background UTL**

| Analyte | Location ID | Sample ID | Sample Value (mg/kg) | SAL (mg/kg) | UTL (mg/kg) | Depth (Inches) | > SAL |
|---------|-------------|-----------|----------------------|-------------|-------------|----------------|-------|
| Uranium | 15-2526     | AAB3406   | 190.35               |             |             | 0-6            | X     |
|         | 15-2527     | AAB3407   | 53.02                | 95          | 5.45        | 18-24          |       |
|         | 15-2527     | AAB3417   | 272.24               |             |             | 0-6            | X     |
|         | 15-2529     | AAB3416   | 90.01                | 130         |             | 0-6            |       |



Los Alamos National Laboratory  
Environmental Restoration Project



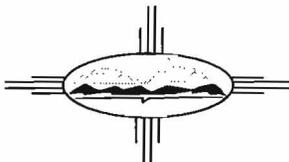
VG-97-008 (5)

# Proposed Cleanup

---

\* no plan written yet, so no PRGs

- **Excavate and remove using heavy equipment**
- **Field screening for U, Be, Pb, and HE**
  - continue process until LIBS, Rad screening, and DTECH indicate results < cleanup goals
- **Confirm with fixed lab samples - HE, metals, and U**
- **Cleanup goals to be developed using industrial land use and a generic worker ( $10^{-6}$  cancer risk; HI of 1)**



*Los Alamos National Laboratory  
Environmental Restoration Project*

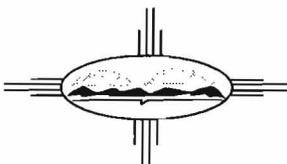


VG-97-008 (6)

# Waste Volume Estimate

---

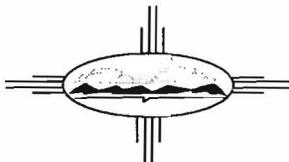
- **Worst case estimate**
- **Interior ~ 2,400 cu.ft.**
  - assuming two feet of removal
- **Bermed area ~ 1,200 cu.ft.**
- **Total approximately 100 cu.yds. plus swell @ 25%  
= 125 cu.yds.**



# **Schedule/Cost Estimate**

---

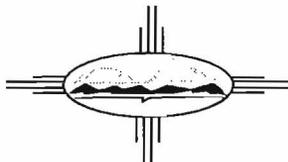
- **Timeframe - Summer 1997**
- **Duration - two weeks**
  - mobilization
  - removal/field characterization
  - demobilization
- **Cost estimate - \$100K - \$400K**
  - depends on waste characterization results
  - may be able to fix Pb, reducing cost



# Implementation

---

- **Storm Water Pollution Prevention Plan**
- **Straw bales/silt fencing**
- **Remove east end of berm**
- **Remove interior of berm down to depth of 2 ft.**
- **Field screening (Rad, LIBS, and DTECH)**
- **Remove additional material (if necessary) based on screening**
- **Field screen face and top of remaining berm, remove material (inside towards outside) until cleanup achieved**



## **Implementation (concluded)**

---

- **Collect confirmatory samples (statistically based plan) to verify cleanup was achieved**
- **Regrade using clean fill (if necessary) and reseed**
- **Dispose of waste**
- **Write completion report**
- **Submit NFA permit modification request**
- **Monitor/report condition of runoff prevention controls**

