



5/13/92 TASY

Department of Energy
Field Office, Albuquerque
Los Alamos Area Office
Los Alamos, New Mexico 87544

File LANL Res



Mr. Benito Garcia, Chief
Hazardous and Radioactive
Materials Bureau
New Mexico Environment Department
Harold Runnels Building
1190 St. Francis Drive, P.O. Box 26110
Santa Fe, New Mexico 87502

Dear Mr. Garcia:

The Department of Energy (DOE) has prepared an action plan for addressing container storage pads 1, 2, and 4 located at Technical Area 54, Area G, at Los Alamos National Laboratory (LANL). On April 8, 1992, during an examination of cemented sludge stored in pad 2, between six to eight 55 gallon steel drums were found to exhibit various stages of corrosion. Furthermore, drums at the perimeter of the pad were found to exhibit early stages of external corrosion. One drum found away from the perimeter of pad 2 was found to exhibit apparent 'pinhole' corrosion. This type of corrosion is believed to be caused by a chemical reaction occurring at the interface of the cemented sludge and the internal surface of the drum. No radioactivity was detected on the outside of the drum. Analysis of other containers showing this same type of corrosion has indicated no release of radioactivity, and no chemical compound has been found on the exterior of the drums other than iron sulfate. It is estimated that approximately 8% of the containers in pads 1, 2, and 4 may exhibit this type of corrosion. As per discussions held on May 13, 1992, with members of your staff we have enclosed copies of the overheads presented at the meeting describing the preliminary plan for addressing the issue. Additional details have been enclosed.

These storage pads are subject to the Resource Conservation and Recovery Act (RCRA) because a portion of these drums are suspected of containing mixed wastes. Storage pads 1, 2, and 4 were included in the RCRA Part A permit application submitted to your office on January 25, 1991. Upon identification of the corroding containers, DOE and LANL determined to inform your office immediately. The affected wastes consist of cemented sludges, process sludges, and various nonliquid solid wastes. Given the type of waste stored on these pads, it is unlikely that the condition of the containers is an immediate cause for alarm, nor does it present an imminent or substantial endangerment to public health or the environment. In a worst-case scenario, such as total loss of container integrity, it is unlikely that a significant concentration of hazardous wastes or radioactivity would be released into the environment.



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LANL maintains a comprehensive environmental monitoring and surveillance program which includes on-going sampling of air, water, soil, sediments, and foodstuffs at locations within TA-54 Area G and at potential exposure locations off-site. Based on data historically collected by this monitoring program, we believe that continued short-term storage of these waste containers will not pose an immediate threat to human health and the environment.

With this in mind, we are concerned that any short-term remediation activity will increase risk to workers and increase the probability of a release of hazardous constituents and radioactivity. Therefore, DOE proposes a two-phase action plan: 1) providing monitored, covered storage in place for the pads; and 2) construction of supporting facilities to enable the safe recovery of the containers in storage and remediation of waste packages as necessary. Phase 1 of the action plan will consist of designing and constructing enclosures over the existing earth-covered storage pads. This will decrease the rate of corrosion of containers due to precipitation and will provide a weather-protected environment in which to conduct the container recovery operations (i.e. phase 2). LANL will develop a plan for assessing the condition of the containers currently in storage during phase 1. Design, procurement, and environmental documentation activities will be initiated immediately so that construction of these enclosures can be completed by mid 1993. Implementation of phase 1 will provide a high level of assurance of containment integrity, in the interim, until waste remediation facilities are constructed.

Phase 2 of the plan will involve construction of drum venting, drum preparation, and waste package remediation facilities, and construction of engineered, RCRA approved storage facilities which will meet requirements for inspectability, segregation, weather protection, and monitoring. Phase 2 will be completed by the end of 1995. Recovery and remediation of waste containers under earth-cover will commence as soon as these facilities become operational.

The above plan presents a general framework for the waste container recovery and remediation operations. Specific details of this plan will be developed based on consideration of many factors including worker safety, environmental impacts, regulatory compliance, and the effects of short-term containment on the rate of corrosion. As required by Ed Horst and Herb Grover of your staff, we will submit a copy of the draft plan addressing this issue for your review and comment by June 1, 1992.

Mr. Benito Garcia

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If you have any questions regarding this matter please contact Jon Mack of my staff at 665-5026.

Sincerely,



Jerry L. Bellows
Area Manager

LESH:2JM-006

Enclosure

cc w/o enclosure:

T. Gunderson, EM-DO, LANL, MS K489

K. Hargis (EM-8:92-1251-1), EM-8, LANL, MS K490

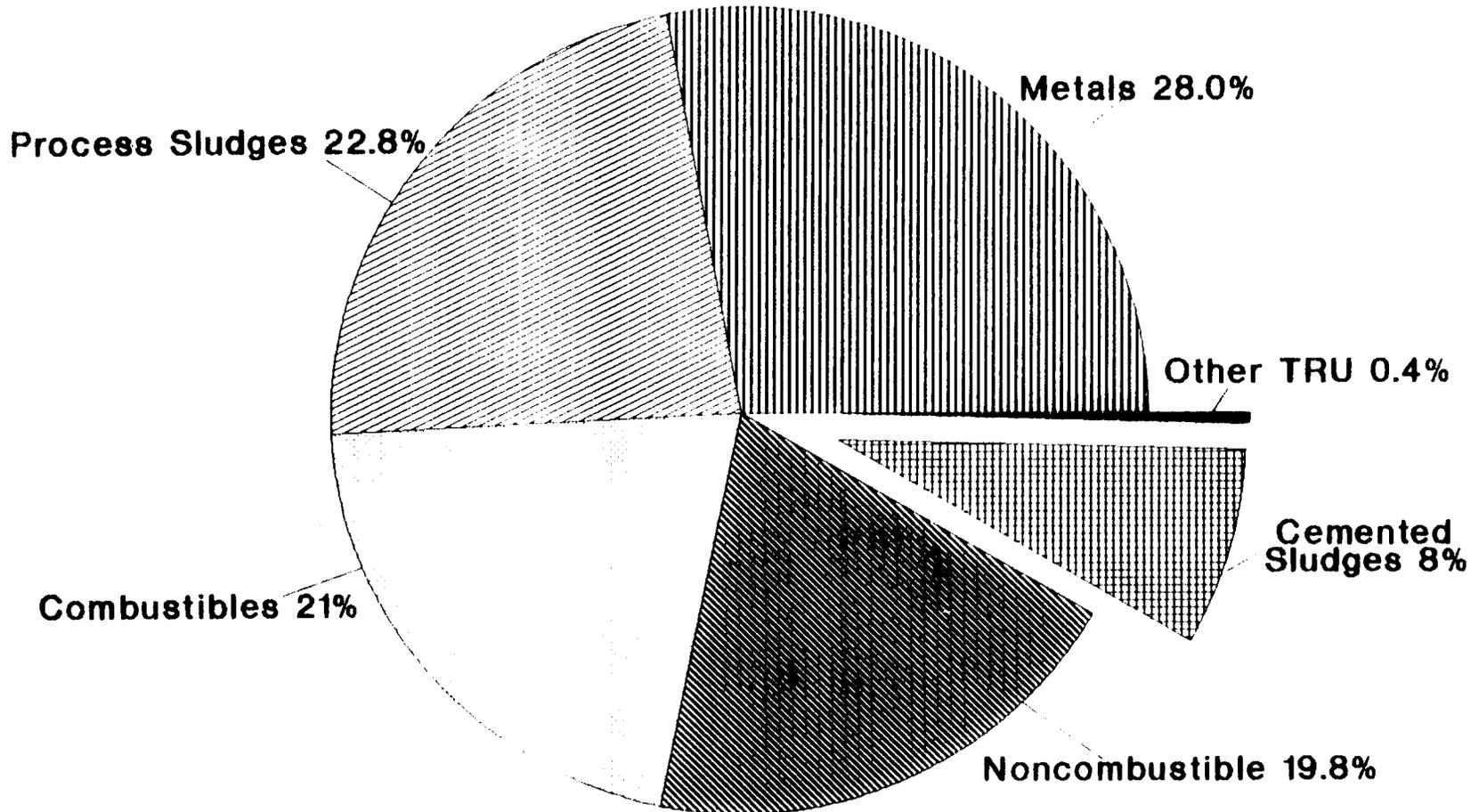
A. Drypolcher, EM-7, LANL, MS E517

J. Corpion, EM-8, LANL, MS K490

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Figure 2

UNCERTIFIABLE TRU IN STORAGE

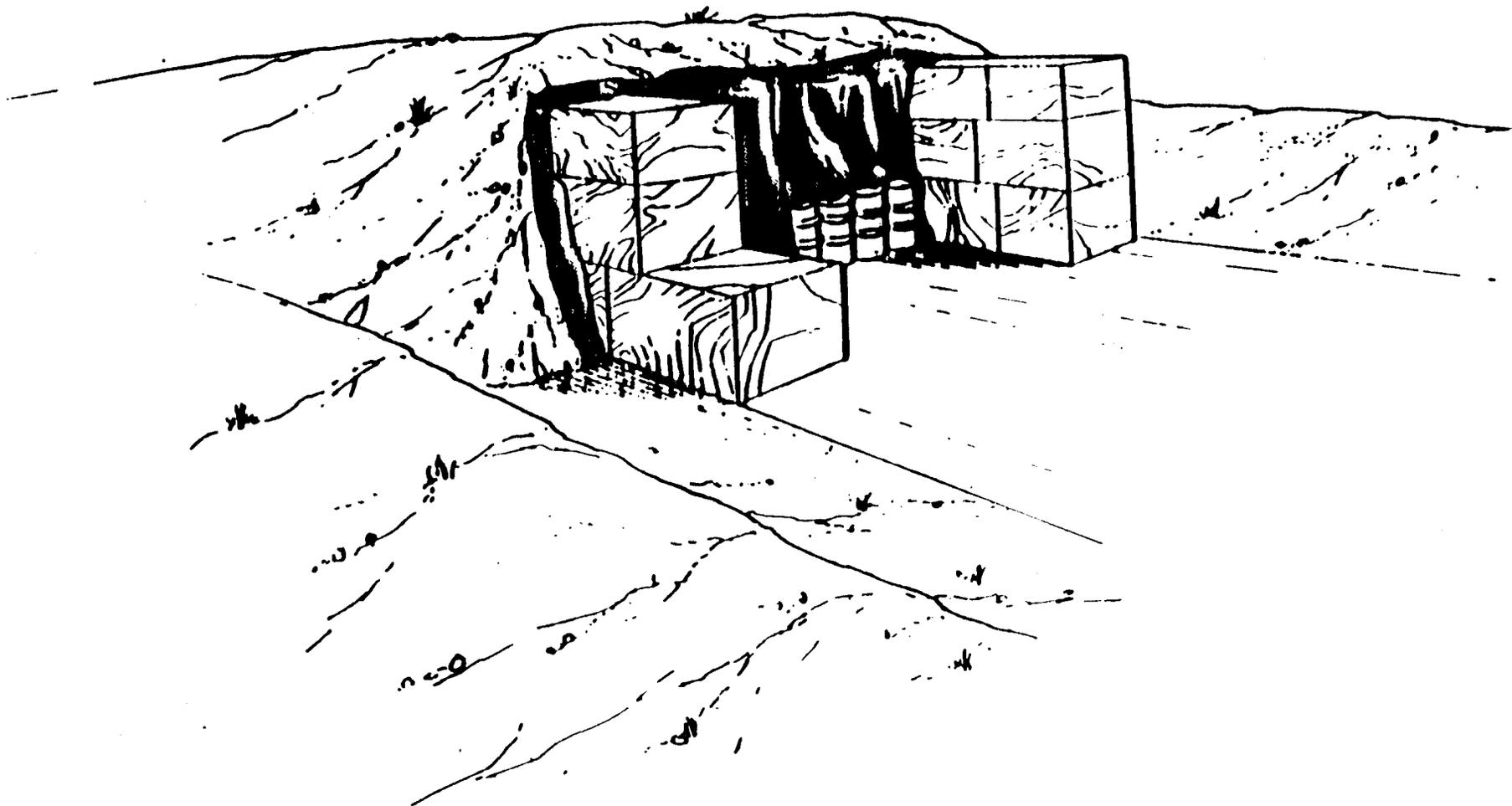


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Table III. Facilities for addressing Pad Stored TRU Wastes

Facility	Operational	Purpose
Drum Preparation Facility	1995	Clean and inspect drum wall thickness
Drum Vent System	1995	Vent and sample headspace for RCRA volatiles
Waste Remediation Facility	1995	Remediate damaged containers
Engineered Short-term Storage Facility	1996	Storage of repaired containers
TRU Waste Treatment Facility (Phase I)	2000	Treat TRU wastes to comply with the WIPP WAC and Waste Analysis Plan
TRU Waste Treatment Facility (Phase II)	2003	Treat the more difficult TRU waste to comply with the WIPP WAC and WAP
Prolonged Engineered Storage Facility	2005	Storage of TRU waste packages until WIPP is ready to receive LANL TRU wastes

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TRU Waste Storage Pad

11/11/11 10:00 AM

Current/Recent Activities

- **Submitted ES&H Questionnaire**
- **Confirmed environmental surveillance results indicate no immediate threat to human health and environment**
- **Reviewed Idaho National Engineering Laboratory operations and plans**
- **Developed tentative safe storage action plan**

10/11/01

External Approvals (NON-LANL) Required – Safe Storage Option

Based on Review of ES&H Questionnaire

- National Environmental Policy Act (NEPA) – DOE
- National Pollutant Discharge Elimination System (NPDES) – NMED
- Resource Conservation & Recovery Act (Rad) – DOE
- Resource Conservation & Recovery Act (MW) – NMED
- NonRadioactive Air Emission Permit/Registration Review – NMED
- Airborne Radioactive Emissions Permit/Registration Review – EPA
- Resource Conservation & Recovery Act / Hazardous & Solid Waste Amendments RCRA/HSWA Corrective Actions – EPA
- PCB's / Toxic Substances Control Act (TSCA) – EPA

LANL Approvals Required – Safe Storage Option

Based on Review of ES&H Questionnaire

- **Facilities Design Review – HS-3**
- **Spill Prevention Control & Countermeasure – EM-8**
- **Occupational Radiological Hazard Assessment – HS-12**
- **Solid Radioactive Waste – EM-7**
- **Chemical, Medical, or Mixed Waste – EM-7**
- **Waste Minimization – EM-DO**
- **Criticality Safety – HS-6**
- **Operational Safety Review – HS-5**
- **Field Services Review – HS-5**
- **Fire Protection/Utilities Review – ENG-8**
- **Siting Review – JCI/EDED**
- **Space Review – JCI/EDED**
- **Preliminary Hazard Analysis – HS-3**
- **Radioactive Air Emissions Monitoring Review – HS-12**

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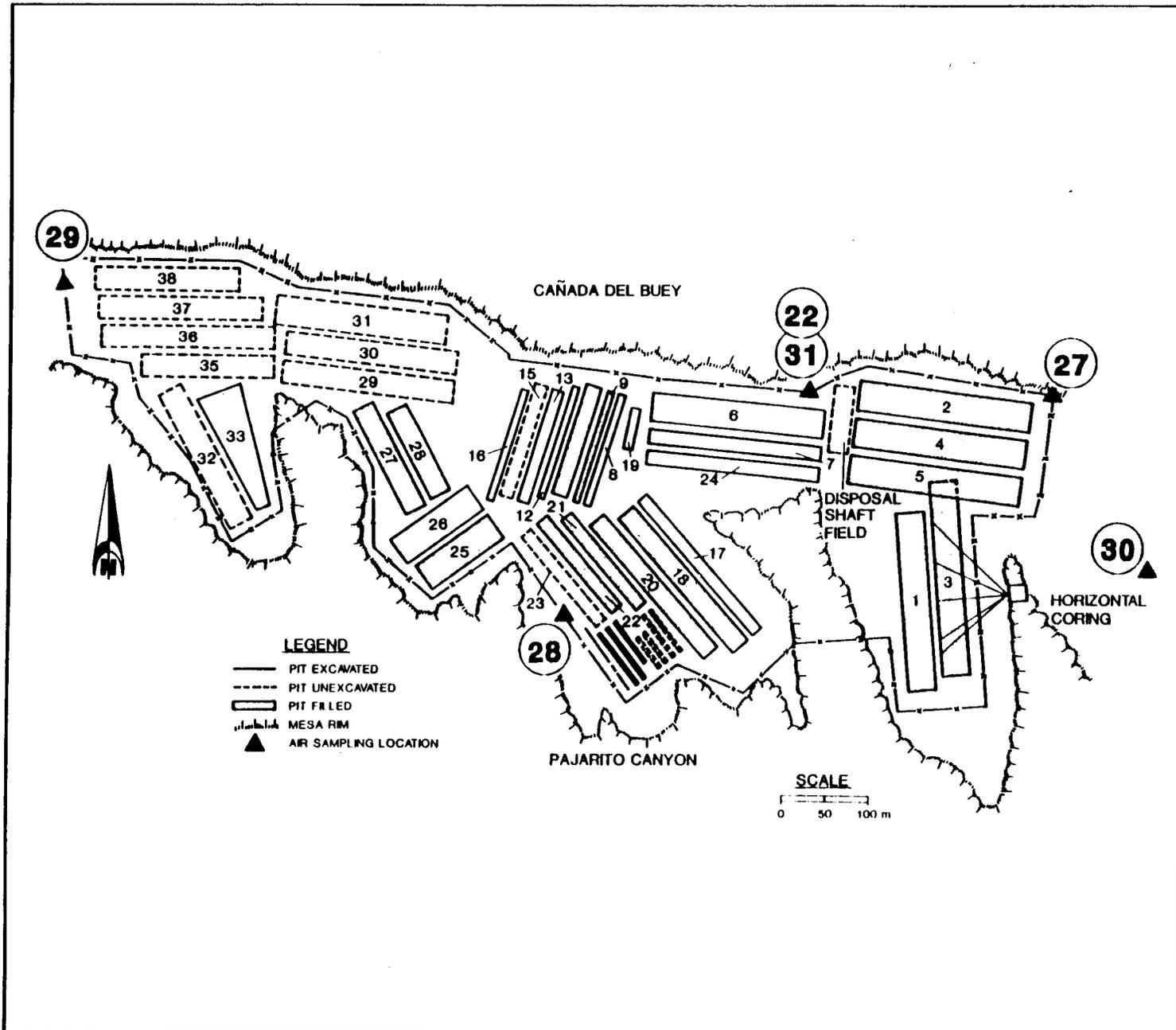


Fig. 4. Active radioactive-waste-management site at Area G (TA-54).

Plan Implementation Constraints

- **Worker health and safety**
- **Risks to public and environment (long/short-term)**
- **Regulatory compliance**

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Phases of Tentative Action Plan

Phase I

- **Enclose existing earth-covered storage pads**
- **Develop plan for further investigation of drum conditions**
- **Initiate design, procurement, and environmental documentation**

Phase II

- **Construction of drum venting, drum preparation, and waste remediation facilities**
- **Construction of engineered, RCRA approved storage facilities**
- **Begin recovery and remediation of waste containers as soon as facilities become operational**

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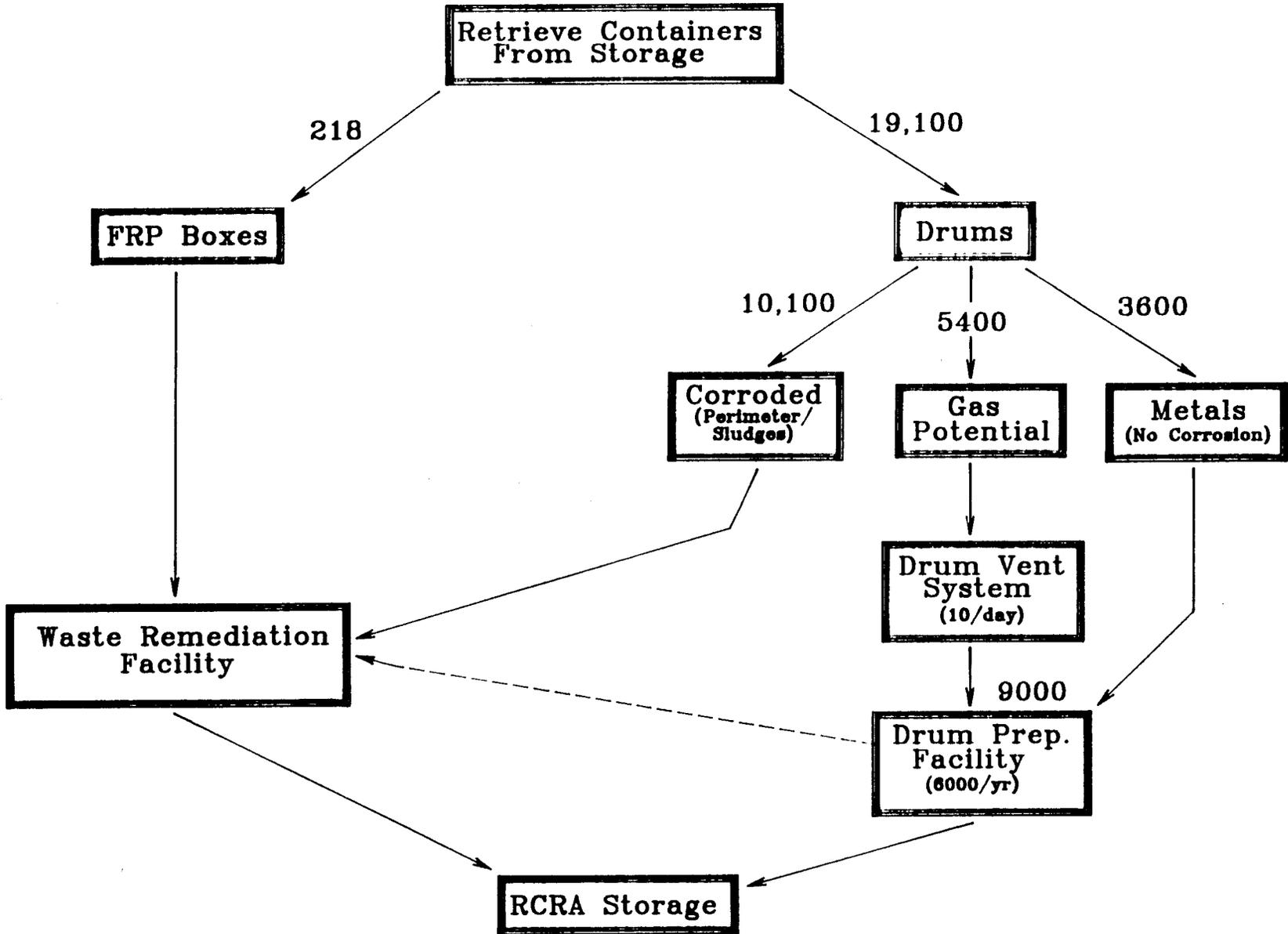
TENTATIVE SAFE STORAGE ACTION PLAN

DESCRIPTION	ADVANTAGES	DISADVANTAGES	PROBLEMS
<ul style="list-style-type: none"> • Eventually retrieve each container, clean container surfaces, test container integrity, vent drums while sampling headspace gases, repack or overpack as necessary, and store in inspectable arrays in domes • Install cover for weather protection with run-on and run-off protection as soon as possible • Install monitoring equipment under cover if required by NMED • Develop comprehensive procedures and safety plans for retrieval operations • Construct/upgrade Drum Preparation Facility, Drum-Venting System, and Waste Remediation Facility 	<ul style="list-style-type: none"> • Responds quickly to control potential releases • Enhances worker safety with necessary facilities, equipment, and procedures • Minimizes potential environmental impact • Allows characterization of headspace gases in drums • Eliminates RCRA inspection and deteriorating container problems • Provides for safe storage of containers • Results in compliance with RCRA container storage regulations 	<ul style="list-style-type: none"> • Causes slight delay in retrieving, overpacking, and storing containers in an inspectable array 	<ul style="list-style-type: none"> • Requires negotiated agreement with NMED and DOE

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Proposed Safe-Storage Plan



Safe Storage Option – FY'1992

- **Design and Install Concrete Footings for Three Storage Domes**
- **Site Preparation**
- **Design and Spec Storage Domes; Initiate Purchase Requests**
- **Initiate TRU Subcontractor Support**
- **Design Enhanced Surveillance Program Plan**
- **Develop Rad and Hazardous Environmental Monitoring Plan**
- **Install Additional Surveillance Stations per Plan**
- **Work ES&H Questionnaire Requirements**

Safe Storage Option – FY'1993

- **Purchase Three Tension Support Domes**
- **Install Three Tension Support Domes**
- **Purchase Monitoring Systems**
- **Install Monitoring Systems**
- **Implement Environmental Surveillance Program (2FTE's)**
- **Implement Monitoring and Inspection Program (2FTE's)**