Los Alamos National Laboratory

ENVIRONMENTAL RESTORATION

Environmental Restoration
University of California
Environmental Restoration, MS M992
Los Alamos, New Mexico 87545
505-667-0808/FAX 505-665-4747

U. S. Department of Energy
Los Alamos Area Office, MS A316
Los Alamos, New Mexico 87544
505-665-7203
FAX 505-665-4504

Date: March 26, 1996
Refer to: EM/ER:96-163

RECEIVED
APR - 1 1996

Mr. Benito Garcia
NMED-HRMB
P.O. Box 26110
Santa Fe, NM 87502

SUBJECT: FINAL VOLUNTARY CORRECTIVE ACTION (VCA) PLAN FOR ACTIVITIES AT TECHNICAL AREA (TA) 35 FOR POTENTIAL RELEASE SITE (PRS) 35-009(b,c,d)

Dear Mr. Garcia:

Enclosed please find an informational copy of the final VCA Plan for activities in TA-35 for PRS 35-009(b,c,d) to be completed in Fiscal Year 1996.

The Department of Energy (DOE) participated in developing and reviewing this plan. The VCA Checklist and Field Authorization Form have been completed and signed. DOE authorization for field work to proceed has been granted and is included with the enclosed plan.

If you have any questions, please call Allyn Pratt (505) 667-4308 or Bob Simeone at (505) 667-0587.

Sincerely,

Jorg Jansen, Program Manager
Environmental Restoration

Sincerely,

Theodore J. Taylor, Program Manager
Los Alamos Area Office

JJ/TT/bp

5221

Enclosures: Final VCA Plan for TA-35 for PRS 35-009(b,c,d)
VCA Checklist and Field Work Authorization Form

Cy (w/enclosure):
B. Driscoll, EPA, R.6, 6PD-N
D. Griswold, ERD, AL, MS A906
J. Harry, EM/ER, MS M992
B. Hoditschek, NMED-HRMB
R. Kern, NMED-HRMB
N. Naraine, EM-453, DOE-HQ
M. Shaner, P&PI, MS J591 (5 copies)
N. Weber, Bureau Chief, NMED-AIP, MS J993
J. White, ESH-19, MS K490
S. Yanicak, NMED-AIP, MS J993
RPF, MS M707

Cy (w/o enclosure):
A. Pratt, EES-13, MS J521
T. Baca, EM, MS J591
D. Bradbury, EM/ER, MS M992
T. Glatzmaier, DDEES/ER, MS M992
B. Simeone, LAAO, MS A316
D. McInroy, EM/ER, MS M992
G. Rael, ERD, AL, MS A906
T. Taylor, LAAO, MS A316
W. Spurgeon, EM-453, DOE-HQ
J. Vozella, LAAO, MS A316
EM/ER File, MS M992

Voluntary Corrective Action Plan for

Potential Release Sites

35-009(b)
35-009(c)
35-009(d)

Abandoned Septic Tanks

Field Unit 4

Environmental Restoration Project

March 1996

A Department of Energy
Environmental Cleanup Program

RECEIVED
APR 1 1996

Los Alamos
NATIONAL LABORATORY

LA-UR-96-990

This page intentionally left blank.

1.0 INTRODUCTION

This document describes the voluntary corrective action (VCA) plan for Potential Release Site (PRS) Nos. 35-009(b, c, and d), which are located within Los Alamos National Laboratory (the Laboratory) Technical Area (TA) -35 on Ten Site Mesa. They have been selected for VCA because their remedies are obvious, are easily implemented, and will prevent potential future safety hazards associated with the buried septic tanks. These PRSs have been grouped into a single VCA plan because the sites are similar in nature, the remedial actions are similar, the sites are located within the same technical area, and it is cost- and time-effective to perform the VCAs concurrently.

PRS Nos. 35-009(b, c, and d) are included in Table A of the Environmental Protection Agency original Resource Conservation and Recovery Act (RCRA), Module VIII, Hazardous and Solid Waste Amendments permit. A RCRA facility investigation (RFI) was performed for these PRSs in 1994. They are being recommended for no further action (NFA) in the RFI report for TA-35 (hereafter referred to as the RFI report), which is currently being prepared, because no RCRA constituents were released to the environment. However, VCAs are planned to remove and dispose of the liquid and sludge in each tank and to properly abandon the tanks according to state of New Mexico regulations.

1.1 Site Type

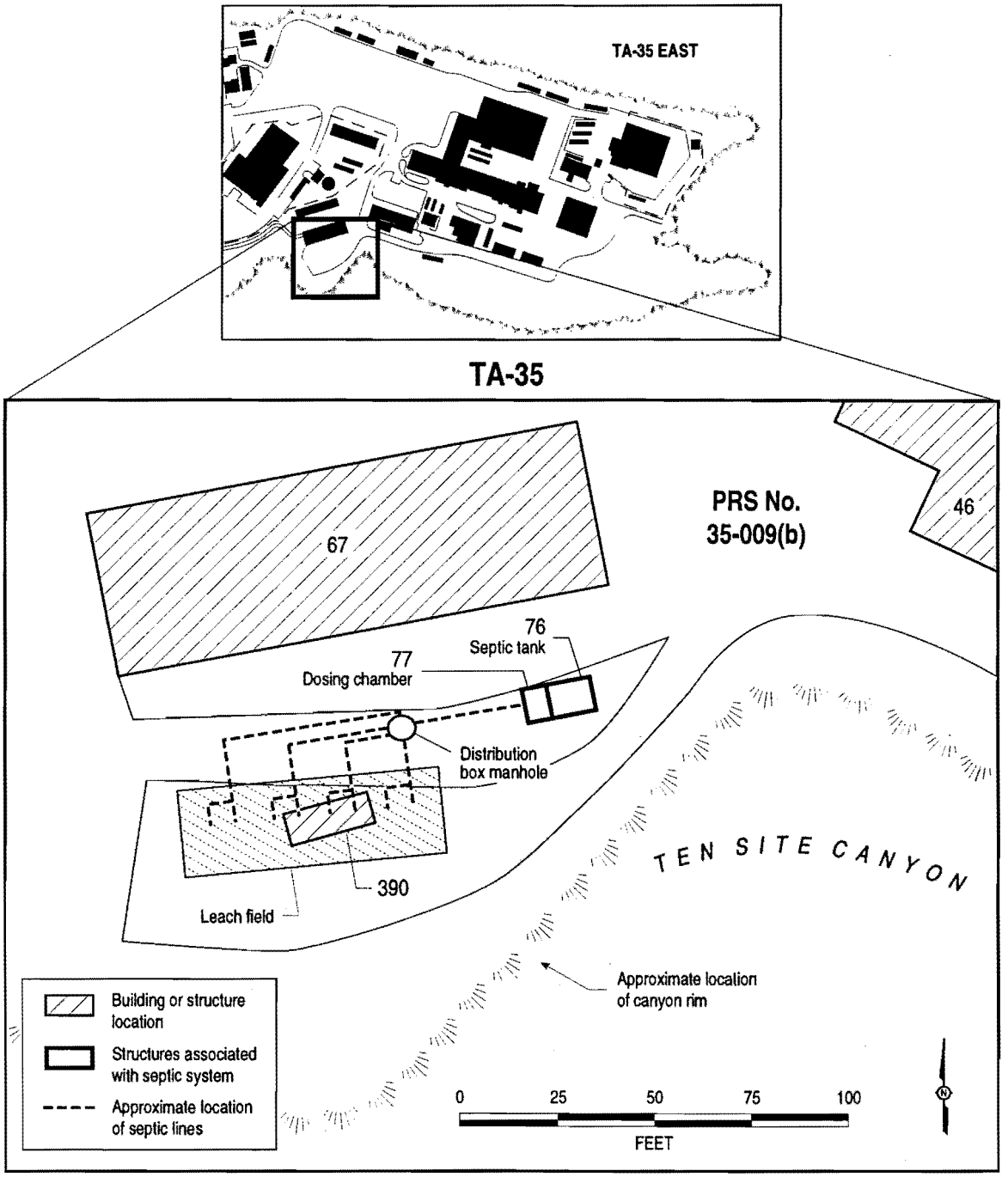
PRS Nos. 35-009(b, c and d) are septic systems that served TA-35 between 1951 and 1990. The septic systems handled sanitary wastes from various laboratory buildings at TA-35 and may have received a variety of industrial wastes, including radionuclides.

1.2 Description of PRS No. 35-009(b)

PRS No. 35-009(b) is an abandoned septic system that is located near the southern edge of Ten Site Mesa, south of building TA-35-67. The PRS includes a septic tank, a dosing chamber, a distribution box manhole, and an associated leach field (see Figure 1).

The septic tank (TA-35-76), located about 30 ft south of building TA-35-67, is a steel or steel-lined concrete tank that is approximately 4 ft wide, 4 ft long, and 4 ft deep. It is accessed through a 2-ft-square steel-lined shaft that extends from the ground surface to a depth of 6 ft. The base of the tank is located about 10 ft below the surface. The dosing chamber (TA-35-77) is located adjacent to and west of the septic tank. The dimensions of the dosing chamber are not known, but the bottom of the structure is about 10 ft from the surface. The dosing chamber is accessed through a 1.5-ft-square concrete shaft that extends to a depth of 6 ft. The dosing chamber contained about 3 ft of water at the time of the RFI. The distribution box manhole, located about 20 ft west of the dosing chamber, is a 15-ft-deep manhole lined with corrugated metal pipe. It was dry at the time of the RFI.

The site of the leach field is covered with asphalt and is used as a parking and equipment storage area. Temporary storage structure TA-35-390 is located on a portion of the leach field. The leach field is not visible at the ground surface, but the results of RFI drilling and subsurface sampling confirmed its location. No outfall pipes from the leach field were found during the engineering surveys, and it is not known if outfall pipes were part of the leach field design. The topography of the site slopes gently to the



Source: LANL ENG-C39519

F 1 / VCA PLAN 35-009(b,c,d) / 031296

Figure 1. Location map for PRS No. 35-009(b).

south toward the edge of the mesa. No natural water courses are defined within the PRS, although the leach field drains southward. Storm water runoff from the asphalt flows southward into Ten Site Canyon.

1.2.1 Operational History

PRS No. 35-009(b) is described in Section 3.3.2 of the *RFI Work Plan for Operable Unit 1129* (the work plan) (LANL 1992, 7666).

The septic system was abandoned in place in 1975 when new sanitary sewer lines were routed from the buildings to a new sewage line, which ran along the south TA-35 access road to the new sewage lagoons in the canyon east of TA-35. The septic system handled sanitary waste from various buildings at TA-35. Specific information concerning waste streams introduced to the septic system is not available.

1.2.2. Chemicals of Potential Concern and Rationale for Proposed Remedial Action

No chemicals of potential concern are present at levels above the screening action levels (SALs).

1.3 Description of PRS No. 35-009(c)

PRS No. 35-009(c) is located in an industrialized area. It is the site of an abandoned septic system at the north edge of Ten Site Mesa, north of building TA-35-2. Structures associated with the PRS include a 1,290-gal. septic tank (TA-35-44) and a distribution box (TA-35-45) (see Figure 2). The septic tank is a steel-lined, reinforced concrete tank approximately 8 ft wide, 12 ft long, and 5 ft deep that is buried beneath 2 ft of fill material.

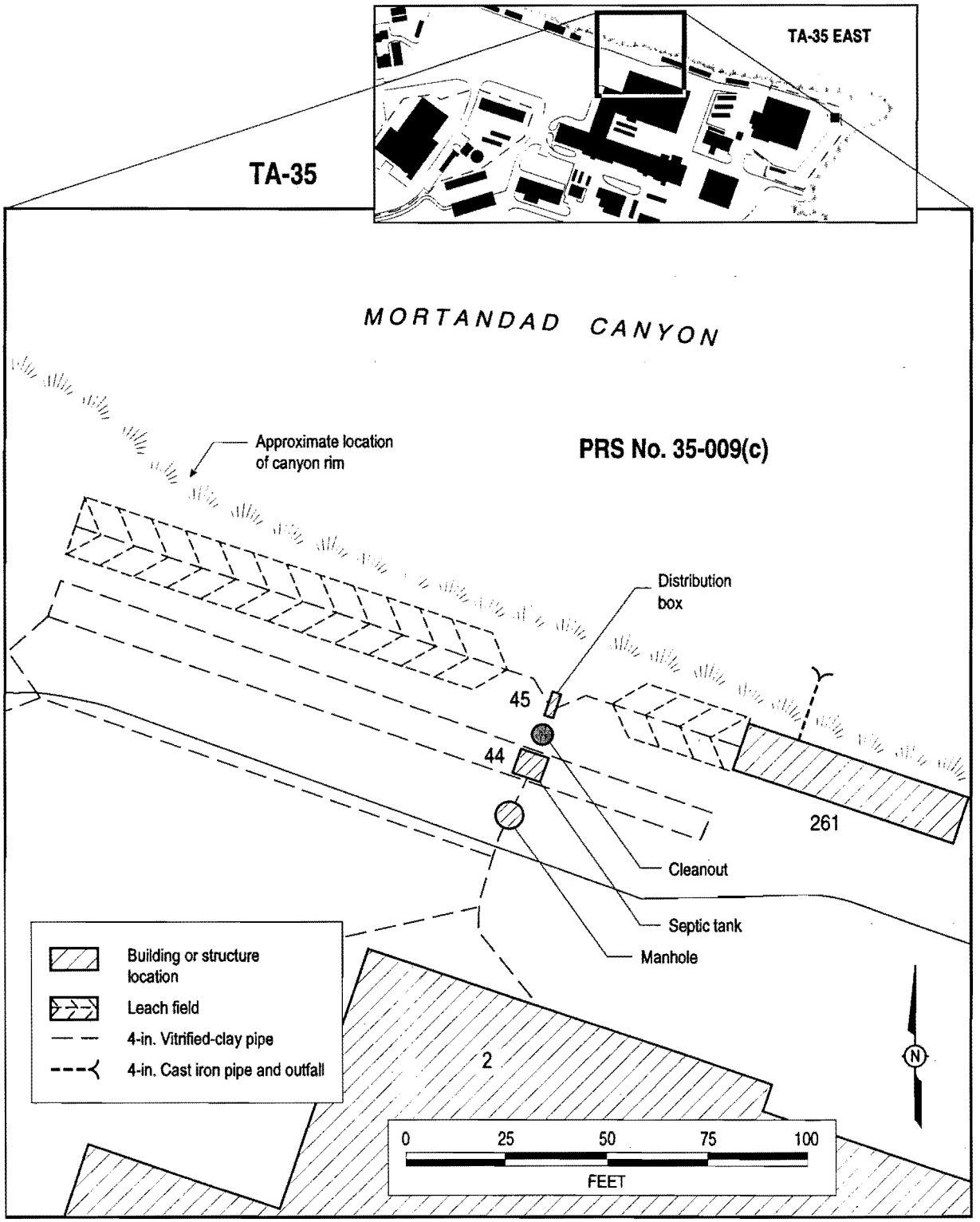
The leach field is located just south of the northern edge of Ten Site Mesa It is parallel to the edge of the mesa and is located beneath the dirt access road leading to portable building TA-35-261. The leach field comprises three drain trenches that cover an area of approximately 1,600 ft^2. Consolidated tuff bedrock is present at depths from 3 to 5 ft below the leach field area. The topography of the site slopes gently to the north-northeast toward the edge of the mesa. No natural water courses are defined within the PRS, although surface runoff and discharge from the leach field flow to the north and east into Mortandad Canyon.

Vegetation is typical of TA-35 and consists of scrub oak brush, grasses, and ponderosa pine.

1.3.1 Operational History

PRS No. 35-009(c) is described in Section 3.3.2 of the work plan (LANL 1992, 7666).

The septic system served TA-35 between 1961 and 1990 and handled sanitary waste from building TA-35-2 and the transportable office building TA-35-253.



Source: LASL 1960 (ENG C-29305), JCI 1991

F 2 / VCA PLAN 35-009(b,c,d) / 031296

Figure 2. Location map for PRS No. 35-009(c).

1.3.2 Chemicals of Potential Concern and Rationale for Proposed Remedial Action

RFI analytical results confirm that no hazardous constituents have been released to the environment from this septic system. The liquid and sludge in the septic tank may contain radioactive and/or hazardous constituents, which will be removed from the tank and properly disposed of according to RCRA regulations before tank closure.

1.4 Description of PRS No. 35-009(d)

PRS No. 35-009(d) is a former septic system that includes a 1,600-gal. septic tank (TA-35-65) and leach fields (see Figure 3). The PRS is located in a nonindustrialized area on a small finger-like mesa that extends to the east from the northeast end of Ten Site Mesa. The topography of the site slopes gently toward the edge of the mesa, where steep mesa-side slopes extend to Ten Site Canyon on the south and Mortandad Canyon on the north. The leach field consists of fine- to coarse-grained sandstone and cobble filter bed material and has consolidated tuff at depths from 8 to 10 ft. Storm-water runoff and effluent from the septic system flow southeast into Ten Site Canyon.

1.4.1 Operational History

PRS No. 35-009(d) is described in Section 3.3.2 of the work plan (LANL 1992, 7666).

The septic system served TA-35 from 1966 until 1990; it handled sanitary waste from building TA-35-27 and possibly other laboratory buildings at TA-35. Specific information concerning waste streams introduced to the septic system is not available.

1.4.2 Chemicals of Potential Concern and Rationale for Proposed Remedial Action

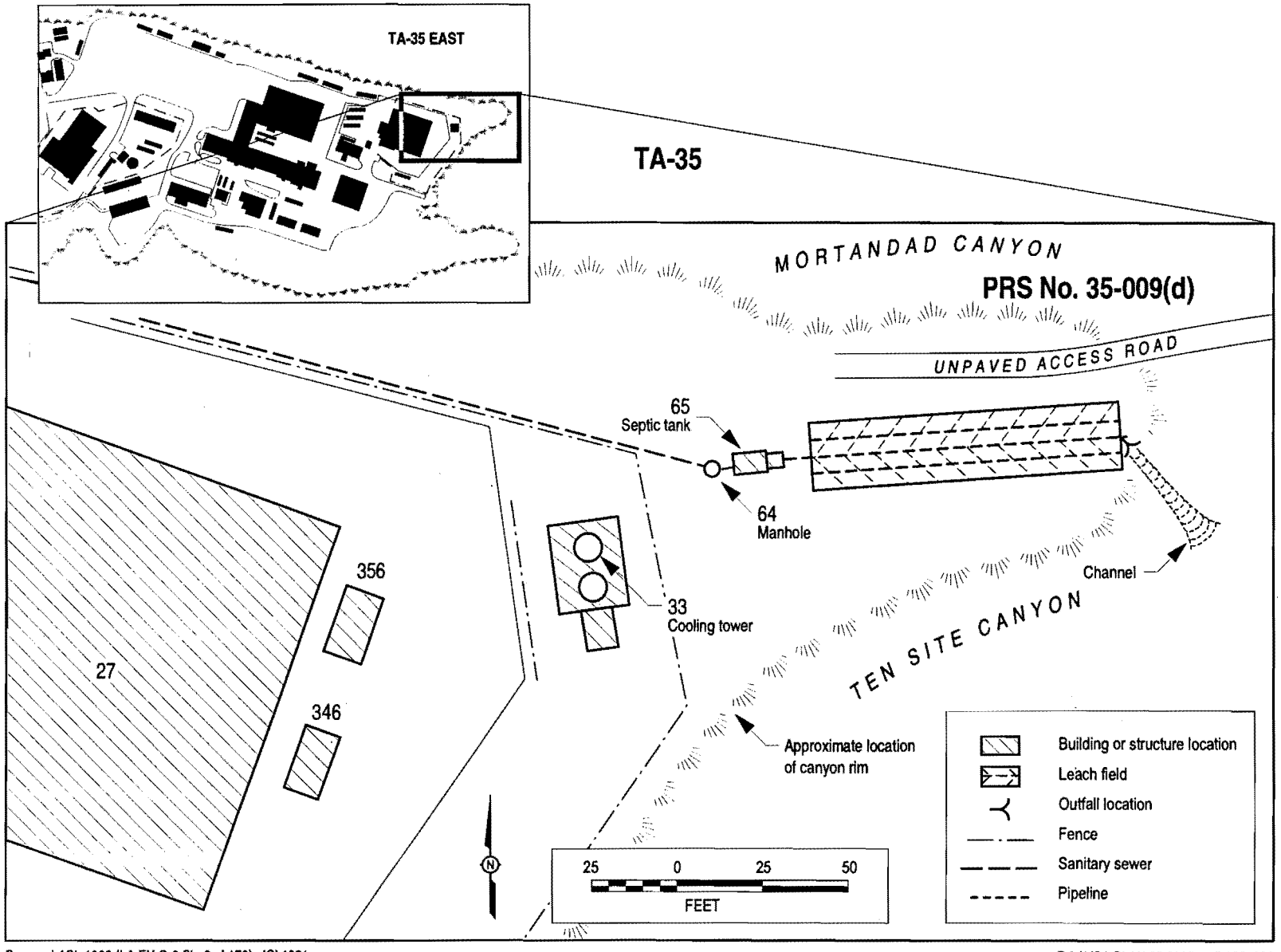
RFI analytical results confirm that no hazardous constituents have been released to the environment from this septic system. The liquid and sludge in the septic tank may contain radioactive and/or hazardous constituents, which will be removed from the tank and properly disposed of according to RCRA regulations before tank closure.

2.0 SITE CHARACTERIZATION

2.1 RFI Information and Other Decision Data

The description and results of the RFI for PRS Nos. 35-009(b, c, and d) are presented in the RFI report (in preparation). A summary of the RFI activities is presented here. Analytical results from the RFI are presented in the RFI report.

RFI field activities for each PRS included engineering surveys, a radiation-grid survey, and a health and safety radiation survey. Field screening during sample collection activities was performed using a Hazco 1256 organic vapor analyzer (OVA), a Ludlum Model 39 alpha meter, and an Eberline ESP-1 beta/gamma meter.



Source: LASL 1963 (LA-EY-C-2 Sh. 2 of 170), JCI 1991

F 3 / VCA PLAN 35-009(b,c,d) / 031296

Figure 3. Location map for PRS No. 35-009(d).

2.1.1 PRS No. 35-009(b)

Six locations were sampled, and a total of 17 samples were collected, including 1 water sample and 16 subsurface soil samples (not including quality assurance/quality control [QA/QC] samples). No radiation anomalies or organic vapors were detected by the health and safety officer during field screening of samples and cuttings.

The RFI analytical results confirm that no hazardous constituents have been released to the environment from this septic system. The liquid and sludge in the septic tank may contain hazardous constituents found at levels below SALs (F002 listing). (See the Waste Characterization Strategy Form in Section 7.7.)

2.1.2 PRS No. 35-009(c)

Thirteen locations were sampled, and a total of 37 samples were collected, including 1 water sample, 3 surface soil samples, and 33 subsurface soil samples. Organic vapor monitoring was performed during sample collection. A reading of 1.5 units was recorded at the 15-ft depth of one sample location. All other OVA readings were negligible.

The RFI analytical results confirm that no hazardous constituents have been released to the environment from this septic system. The liquid and sludge in the septic tank may contain hazardous constituents (F002 listing). (See the Waste Characterization Strategy Form in Section 7.7.)

2.1.3 PRS No. 35-009(d)

Eleven locations were sampled, and a total of 26 samples were collected, including 1 water sample, 3 surface soil samples, and 22 subsurface soil samples (not including QA/QC samples).

During the drilling and soil sample collection activities, low levels of organic vapors were detected in four samples. OVA readings ranged from 0.5 to 4.0 units. During collection of the water sample, an OVA reading of 6.0 units was recorded when the septic tank cover was opened, and an OVA reading of 1.0 unit was recorded at the surface of the water sample.

The RFI analytical results confirm that no hazardous constituents have been released to the environment from this septic system. The liquid and sludge in the septic tank may contain New Mexico "Special Waste" (see the Waste Characterization Strategy Form in Section 7.7).

3.0 PROPOSED REMEDY

3.1 Description of the Proposed Remedial Action

The VCA activities to be performed at PRS Nos. 35-009(b, c, and d) entail abandoning the septic tanks in place in accordance with the New Mexico Uniform Plumbing Code I-11. The contents of the tanks will be removed using a vacuum suction truck, and the tanks will be pressure sprayed and rinsed with fresh water. The rinse water will also be removed using the vacuum suction truck.

The tanks will be filled with concrete or other suitable materials in accordance with the Plumbing Code. Associated structures (that is, the distribution box, dosing chamber, and manholes) will also be filled with concrete. No remedial actions are planned for the leach fields because no risks to human health or the environment are present.

No excavation will be performed unless access is not possible for cleaning the tanks or filling them with concrete. In such a case, excavation to the tops of the tanks may be performed, and all or part of the tops of the tanks may be removed as needed for access. If excavation is required, the excavated soil will be used to fill and relevel the site to its pre-VCA condition.

3.2 Basis for Cleanup Levels

PRS Nos. 35-009(b, c, and d) are located on Department of Energy-owned land. The area is removed from public access roads. In the foreseeable future, the land is anticipated to be used exclusively for Laboratory (industrial) operations (LANL 1994, 53451).

These VCAs are driven by human health and safety considerations for leaving empty underground structures in place. Because these sites are located in an area that is highly industrialized, the tanks and associated structures will be made to withstand future industrial traffic and building or structure construction. The VCAs for these sites will not be conducted in response to a known release or potential for release; therefore, no cleanup levels are applicable.

3.3 Site Restoration

No excavation is planned during these VCAs; therefore, site restoration will not be necessary. However, if excavation is required to properly abandon these septic tanks, the sites will be backfilled with clean soil material, and the sites will be leveled and recontoured to its pre-VCA condition. The sites will then be reseeded with native grasses.

4.0 WASTE MANAGEMENT

4.1 Estimated Waste

Tables 1, 2, and 3 list the estimated types and volumes of waste that will be generated during VCA activities.

TABLE 1

ESTIMATED WASTE FOR PRS No. 35-009(b)

Item	Waste Type	Anticipated Volume
Personal protective equipment	Solid	1 5-gal. pail
Liquid, sludge, and decontamination water	Liquid	1,500 gal.*

*The conservative estimate is based on the approximate volume of the tank.

TABLE 2

ESTIMATED WASTE FOR PRS No. 35-009(c)

Item	Waste Type	Anticipated Volume
Personal protective equipment	Solid	1 5-gal. pail
Sludge and decontamination water	Liquid	1,290 gal.*

*The conservative estimate is based on the volume of the tank.

TABLE 3

ESTIMATED WASTE FOR PRS No. 35-009(d)

Item	Waste Type	Anticipated Volume
Personal protective equipment	Solid	1 5-gal. pail
Liquid, sludge, and decontamination water	Liquid	1,600 gal.*

*The conservative estimate is based on the volume of the tank.

4.2 Method of Management and Disposal

Because of the possibility for generating hazardous waste, the personal protective equipment (PPE) waste generated from the VCA activities may be stored until final disposal in a satellite accumulation area in a protective manner as described on the Waste Characterization Strategy Form in accordance with the Environmental Restoration (ER) Project administrative procedure LANL-ER-AP-05.3, "Management of Environmental Restoration Program Wastes" (LANL 1992, 11686).

The sludge and liquid in each tank will be removed by a vacuum/pumper truck and transported directly to the approved waste disposal facility at a location to be determined with guidance from Laboratory group CST-5. PPE waste will be conservatively characterized by associating liquid and sludge sample analytical results to the waste.

5.0 CONFIRMATORY AND VERIFICATION SAMPLING PLAN

Because PRS Nos. 35-009(b, c, and d) have been recommended for NFA, no confirmatory or verification sampling is required for these VCAs. The RFI report contains the analytical results for these PRSs. The analytical data are presented in the RFI report.

6.0 ESTIMATED TIME TO COMPLETE THE ACTION AND UNCERTAINTIES

The time required to perform the VCA at each of the three septic tanks is estimated to be approximately two to three days. The VCAs are planned to be completed within about seven to ten days after the activities begin.

This page intentionally left blank.

7.0 ANNEXES

7.1 Risk-Based Cleanup Level Assumptions and Calculations

PRS Nos. 35-009(b, c, and d) have been recommended for NFA in the RFI report (in preparation). The RFI report contains the RFI data and all the assumptions and calculations pertinent to these PRSs.

7.2 RFI Analytical Results

The analytical results are contained in the RFI report.

7.3 Site Maps

Figure 1 is a site map of PRS No. 35-009(b); Figure 2 is a site map of PRS No. 35-009(c); and Figure 3 is a site map of PRS No. 35-009(d).

7.4 Implementation Standard Operating Procedures

See Volumes I and II of the ER Project standard operating procedures, as updated to 1995 (LANL 1991, 21556).

7.5 Quality Assurance Plan

The ER Project *Quality Assurance Project Plan Requirements for Sampling and Analysis* (LANL 1996, 53450) will be followed throughout the VCA activities.

7.6 Site-Specific Health and Safety Plan

The VCAs will be performed in accordance with the approved site-specific health and safety plan, which is attached.

This page intentionally left blank.

Los Alamos National Laboratory

ER PROJECT SHORT FORM SSHASP

SSHASP Number 107

Location TA-35 *Field Unit* 4

Task Name Voluntary Corrective Action (VCA) Activities at PRSs 35-009 (b, c, and d) *Date* 2/28/96

SSO Approval John K Hayes *Date* 2/27/96

Field Project Leader Approval [illegible] *Date* 2/28/96

Field Unit HS Rep. Approval William J. Brazile *Date* 2/28/96

ESH-1 ER/D&D Team Leader [illegible] *Date* 2-29-96

Subcontractor HS Approval [illegible] *Date* 2/27/96

Field Team Manager Approval Deba Daymon *Date* 2/25/96

Key Personnel

Facility Representative Pete Bussolini *Phone/Pager* 667-0370

Field Team Manager Deba Daymon *Phone/Pager* 662-1327 / 470-1092

Field Team Leader Leslie Sontag *Phone/Pager* 672-3666 / 699-1702

Site Safety Officer Darril Stafford / John Hayes (alternate) *Phone/Pager* 672-3666 / 699-2762

RCT Darril Stafford / John Hayes *Phone/Pager* 672-3666 / 699-2762

Field Unit HS Representative Bill Brazile *Phone/Pager* 665-5128 / 104-6845

ESH-1 Team Leadert Pat LaFrate *Phone/Pager* 667-7137 / 104-7234

ESH-1 Oversight Marty Peifer *Phone/Pager* 667-7083 / 104-6649

Task Description

PRS 35-009(b,c,and d) consist of three sanitary septic systems at TA-35. The three systems went online in the early to mid 1950s and went offline between 1990 and 1993. A sampling investigation has been performed at these three PRSs, and each has been recommended for no further action (NFA). However, VCA activities are planned which exceed NFA requirements. These activities will include removal and disposal of the liquid and sludge and then filling each tank to fulfill state regulatory closure requirements. The tanks will be pumped out with a tank type pump truck and then rinsed out and pumped again. Once empted, the septic tanks, distribution boxes and dosing chambers will be filled with concrete. The tasks associated with these activities are summarized in Appendix A.

Hazard Analysis

List all chemical, biological, physical, and radiological hazards associated with this task including hazard assessment ratings (ER Project HASP, Appendix C).

Chemical: **VOCs-** Dichloroethane [1,1-], Trichloro-1,2,2-trifluoroethane[1,1,2-], Trichloroethane [1,1,1-], Chloroethane. HAR of Negligible. **METALS** - Arsenic, Barium, Copper, Lead, Lithium, Manganese, Molybdenum, Nickel, Silver, and Strontium. HAR of Negligible. (Data Attached)

Biological: Snakes, ticks, rodents (hantavirus), bloodborne pathogens. HAR of Minor.

Physical: Slips, trips, and falls, working around open manholes and septic pits. HAR of Minor.

Radiological: Low level amounts of Alpha, Beta, and Gamma. Isotopes include ^{241}Am, ^{144}Ce, ^{60}Co, ^{137}Cs, ^{22}Na, ^{237}Np, ^{238}Pu, ^{239}Pu, ^{234}U, ^{235}U, and ^{238}U. HAR of Negligible. (Data Attached)

List all other associated Special Work Permits/Procedures and Number N/A
(include RWP, SWP, CSP, LO/TO, Spark/Flame, etc.)

Will task affect other LANL operations, other employees, or other tasks? No X Yes ____
If yes, explain precautions taken and contacts notified

Hazard Controls

Engineering/Administrative Controls, Special Equipment, etc. Pump trucks and concrete trucks will not be allowed to enter EZ. Workers near open pit will wear life line that will not permit them to become close enough to pit to fall in.

Additional Comments Attached: Yes_____ No_____ X_____

PPE (Personal Protective Equipment)

Head N/A

Face & Eye Safety glasses and or face shield when spraying out tanks, or working in the Exclusion Zone (EZ).

Gloves Nitrile gloves and leather gloves for workers directly involved with pumping, spraying, and concrete work in the EZ.

Hearing Hearing protection will be worn if noise levels exceed 85dB(A)

Body Coveralls (Cotton, Kleenguard, or Saranex at SSO discretion) for EZ work

Foot Steel-toe safety shoes for EZ work.

Respiratory: Type of Respirator N/A Type of Cartridge

Additional Protection/Comments none

Monitoring

List all personnel and area monitoring to be performed for this task, including action levels and equipment to be used, and any dosimetry requirements.

Chemical: A FID will be used to monitor for VOC constituents. Action level will be 5 ppm above background sustained for one minute in the breathing zone.

Biological: None

Physical: If noise levels exceed 85 dB(A), workers will employ hearing protection. An initial survey will be performed to establish zones.

Radiological: β/γ ESP-1 with HP-260 probe or equivilent. α- Ludlum 139 with air proportional probe or equivilent. In addition, health physics personal dosimetry will be required per Appendix B. This screening and dosimetry will be used as a precaution. Only low level contamination has been detected in these tanks, however process knowledge indicates that initial operations at TA-35 involved a variety of radionuclides, therefore the potential of encountering radioactive contamination exists. In addition a micro R/hr will be kept on sight.

Site Control

Describe how site access and control will be maintained. (Attach a site map)

The site shall be marked off with cones and tape to prevent unauthorized entrance. EZ, CRZ and SZ shall be established around PRSs.

Decontamination

Describe how decon will be performed and which option will be used (ER Project HASP, Section 8).

In order to minimize the waste generated during the VCA activities, a spray bottle containing deionized water will be used to decon PPE and tools. If necessary, Liquinox will be used if decon measures require. Decontamination fluids generated will be pumped into the tank truck. Equipment decon will be performed in the EZ. All personnel and equipment will be screened by the RCT prior to exiting the EZ.

Spill Containment

Unless site personnel are trained to the first responder operations level, all site spills will be handled by LANL Emergency Management and Response (EM&R).

Emergency Response

Attach an emergency call-out list and a route to ESH-2/LAMC. In the event of an emergency, contact the ESH-1 oversight RCT. (See Appendix D)

First-Aid/CPR Provider: Darril Stafford/ Leslie Sontag

Communications: Cellular phone will be on site (699-1702 and 699-2762)

Incident Response Equipment: An approved first-aid kit, BBP kit, and eye wash shall be kept in the SZ.

Fire Extinguishing Equipment: A 20 lb. fire extinguisher shall be kept in the SZ.

Medical Surveillance

List all medical surveillance required for this task (ER Project HASP, Section 11).

All personnel shall be medically approved for HAZWOPER work, hearing conservation if noise levels exceed 85 dB (A). In addition, health physics dosimetry will be required per attached Appendix B.

Training Requirements

Attach a copy of an appropriate training matrix (ER Project HASP, Section 10).

Participant Acknowledgment: (Per ER Project HASP, Sections 1.2 and 10.1.3)

Pre-job Conference: Date/Initials_____

Printed Name	Z Number	Signature	Date

APPENDIX A
SCOPE OF WORK

TASK ID	TASK DESCRIPTION	POTENTIAL CONTAMINANTS & HAZARDS	ANTICIPATED DATES/DURATION
Task 1 Site Preparation	This task involves all activities performed at the site before operations begin. 1-A Equipment preparation / Mobilization: this task will include installation of zone barriers, equipment mobilization, and preparation.	None	2/26/96-3/15/96
Task 2 Site cleanup operations	This task includes all activities directly involved with or taking place during site cleanup to DOE and EPA acceptance criteria. 2-A Pumping Tanks: Workers will remove the contents of the tanks with pump truck. 2-B Pressure washing tank: Workers will pressure wash the tanks to loosen any residual debris. 2-C Pumping Tanks: Workers will pump tanks again to remove contents from pressure wash. 2-D Filling Tanks: Workers will fill septic tanks, distribution boxes and dosing chambers with concrete to complete job.	VOCs, Metals, and Falling Hazard.	2/26/96-3/15/96
Task 3 Waste Management	On-site coordination of waste management, including identification, handling, sampling, transport and disposition of non-hazardous, potentially hazardous and hazardous wastes. 3-A Liquid tank contents will be pumped and transported off-site for disposal. Waste to be stored on site will be limited to PPE (coveralls, gloves, etc.), plastic sheeting, and tape. Waste will be stored within the boundary of each specific PRS pending disposal.	VOCs, Metals	2/26/96-3/15/96
Task 4 Site Completion	This task consists of activities carried out after the determination has been made that VCA operations have brought the site to a state which meets cleanup criteria. 4A- Demobilization: Following determination that VCA is complete zone barriers and all equipment will be removed from the site.	VOCs , Metals	2/26/96-3/15/96

APPENDIX B
PERSONAL DOSIMETRY REQUIREMENTS

HEALTH PHYSICS (RADIATION) [Refer to Section 6 of the HASP.]

HAZARDOUS SUBSTANCE/ CONDITION	TASK(s)	ACTION LEVEL(s)	DOSIMETRY REQUIREMENT	ACTION LEVEL(s) RATIONALE
External sources of Radiation Exposure	All	Potential to exceed 100 100 mREM/year dose limit	Monthly TLD Badge	10 CFR 835
Internal sources of Radiation Exposure	All	Potential to exceed 100 100 m/REM/year dose limit	Urinalysis - In Vitro may be required if conditions warrant and shall be specified by ESH-1/ESH-12	10 CFR 835

APPENDIX C PERSONNEL AND EQUIPMENT DECONTAMINATION				
PERSONNEL AND ENVIRONMENTAL MONITORING EQUIPMENT (EME)				
DECON REQUIREMENTS	**TASK(s)**			
	1	2	3	4
Option 1 Standard Approach Level D				
Wash Soap	N/A	X	X	X
Wash Solvent	N/A	X (Water)	X (Water)	X (Water)
Aqueous Rinse	N/A	X (Water)	X (Water)	X (Water)
PPE to be Disposed	N/A	X	X	X

APPENDIX D
EMERGENCY CONTACTS AND PHONE NUMBERS

TA-35

MEDICAL EMERGENCY/FIRE:

Los Alamos Fire Dept---------- 667-7080

HAZARDOUS RELEASE/SPILL:

LANL HAZMAT Team (EM&R)---------- 667-6211

LANL Occupational Medicine Clinic (ESH-2)---------- 667-7848

Los Alamos Medical Center Hospital---------- 662-2455

Security OS/Pro Force---------- 667-6534

Los Alamos Police---------- 662-8222

LANL Health and Safety ESH-5---------- 665-7221

LANL ESH-1 Team Leader Pat LaFrate---------- 667-7137/104-7234

FPL: Allyn Pratt---------- 667-4308

Alternate FPL: Dave Broxton---------- 667-2492

FTM: Deba Daymon---------- 662-3700/470-1092

FTL: Leslie Sontag---------- 672-3666/699-1702

Field Unit HS Rep.: Bill Brazile---------- 665-5128/104-6845 access 665-9800

Field Unit RCT: Marty Peifer---------- 667-0083/104-6649 access 665-9800

Management Contacts:

ERM/Golder Contacts: **Al Funk 662-3700, John Williams 662-3700**

Construction Project Coordinator: **Henry Nunez (505) 699-1318**

EMERGENCY REPORTING INFORMATION

When calling for emergency services, have the following information available to report:

- Site name/location/phone #
- Number of personnel involved
- Caller ID
- Name and condition of affected employees
- Nature of emergency
- Actions taken and assistance required

APPENDIX E

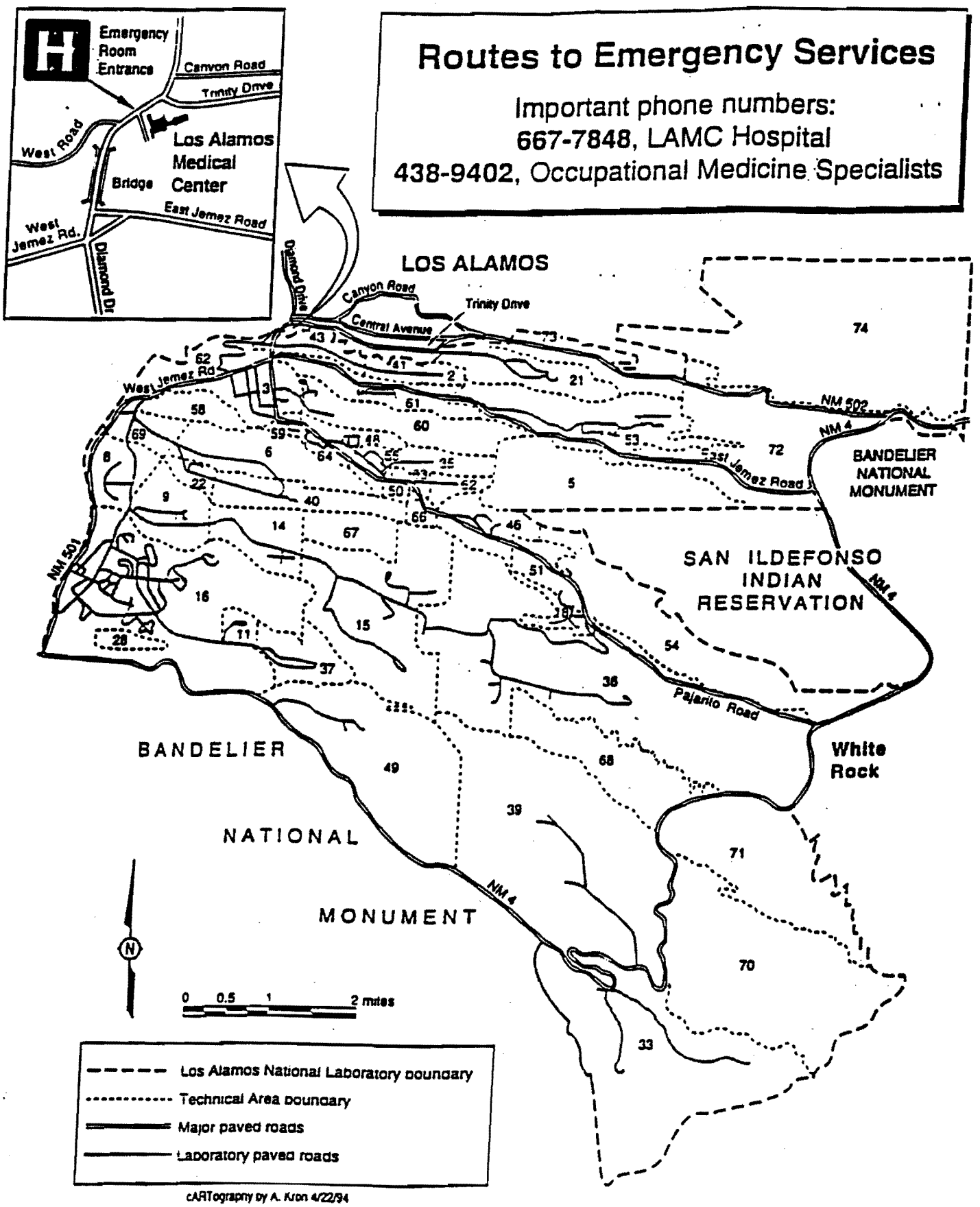
TRAINING REQUIREMENTS

R=Read Training; C=Class Training; F=Field Training; AN=As needed per the HAS; ER=Employee Required

Training	Personnel Role				
Requirements	FTM	FTL/Sampler	SSO/RCT	Waste Mgmt	Heavy Equipment Operator
HASP	R	R	R	R	R
SSHASP	R	R	R	R	R
Pre-Job Brief	F or C	F or C	F or C	F or C	F or C
Daily Tailgate	F	F	F	F	F
TA Specific	C	C	C	C	C
GET	C	C	C	C	C
HazCom	R	R	R	R	R
Conduct Oper	R	R	R	R	R
Occurrence Reporting	R	R	R	R	R
OSHA Rights	R	R	R	R	R
Health Physics Checklist	C	C	C	C	C
Rad Worker II	C	C	C	C	C
40 Hr Worker	C	C	C	C	C
*24 Hr Field Training	F	F	F	F	F
8 Hr Supervisor	C	C	C		
8 Hr Refresher	C	C	C	C	C
First Aid		C	C		
CPR		C	C		
Sanitation [29 CFR			R		
Signs,Signals, Barricades [29 CFR 1926.200]			R		
Excavation/Trenching Competent Person [29 CFR 1926.65(k)(1) and 32 (f)]		R	R		
First Responder Awareness			C		
PPE (level D)	F	F	F	F	F
Bloodborne Pathogens			C		

Routes to Emergency Services

Important phone numbers:
667-7848, LAMC Hospital
438-9402, Occupational Medicine Specialists



cARTography by A. Kron 4/22/94

PRS	OU1129	Barcode	Analyte	Result	Qualifier	Units
			Organics			
35-009(b)	F35-2226	AAA6475	Dichloroethane [1,1-]	98		ug/L
35-009(b)	F35-2226	AAA6475	Trichloro-1,2,2-trifluoroethane [1,1,2-]	5.7		ug/L
35-009(b)	F35-2226	AAA6475	Trichloroethane [1,1,1-]	63		ug/L
35-009(b)	F35-2226	AAA6475	Chloroethane	23		ug/L
			Metals			
35-009(b)	F35-2226	AAA6475	Arsenic	5		ug/L
35-009(b)	F35-2226	AAA6475	Barium	52		ug/L
35-009(b)	F35-2226	AAA6475	Copper	430		ug/L
35-009(b)	F35-2226	AAA6475	Lead	3		ug/L
35-009(b)	F35-2226	AAA6475	Lithium	120		ug/L
35-009(b)	F35-2226	AAA6475	Manganese	72		ug/L
35-009(d)	F35-2228	AAA6571	Molybdenum	16.7		ug/L
35-009(b)	F35-2226	AAA6475	Nickel	57		ug/L
35-009(d)	F35-2228	AAA6571	Silver	5.9		ug/L
35-009(b)	F35-2226	AAA6475	Strontium	1100		ug/L
			Rad			
35-009(d)	F35-2228	AAA6571	PU-238	0.081		pCi/L
35-009(d)	F35-2228	AAA6571	PU-239	0.009		pCi/L
			Rad Van			
35-009(b)	F35-2226	AAA6475	Alpha	1.45		pCi/L
35-009(c)	F35-2227	AAA6524	AM-241 -	101.44		pCi/L
35-009(c)	F35-2227	AAA6524	CE-144 -	357.38		pCi/L
35-009(b)	F35-2226	AAA6475	CO-60 -	24.24		pCi/L
35-009(b)	F35-2226	AAA6475	CS-137 -	210.17		pCi/L
35-009(d)	F35-2228	AAA6571	EU-152	81.96		pCi/L
35-009(b)	F35-2226	AAA6475	NA-22 -	298.39		pCi/L
35-009(b)	F35-2226	AAA6475	NP-237 -	1357.21		pCi/L

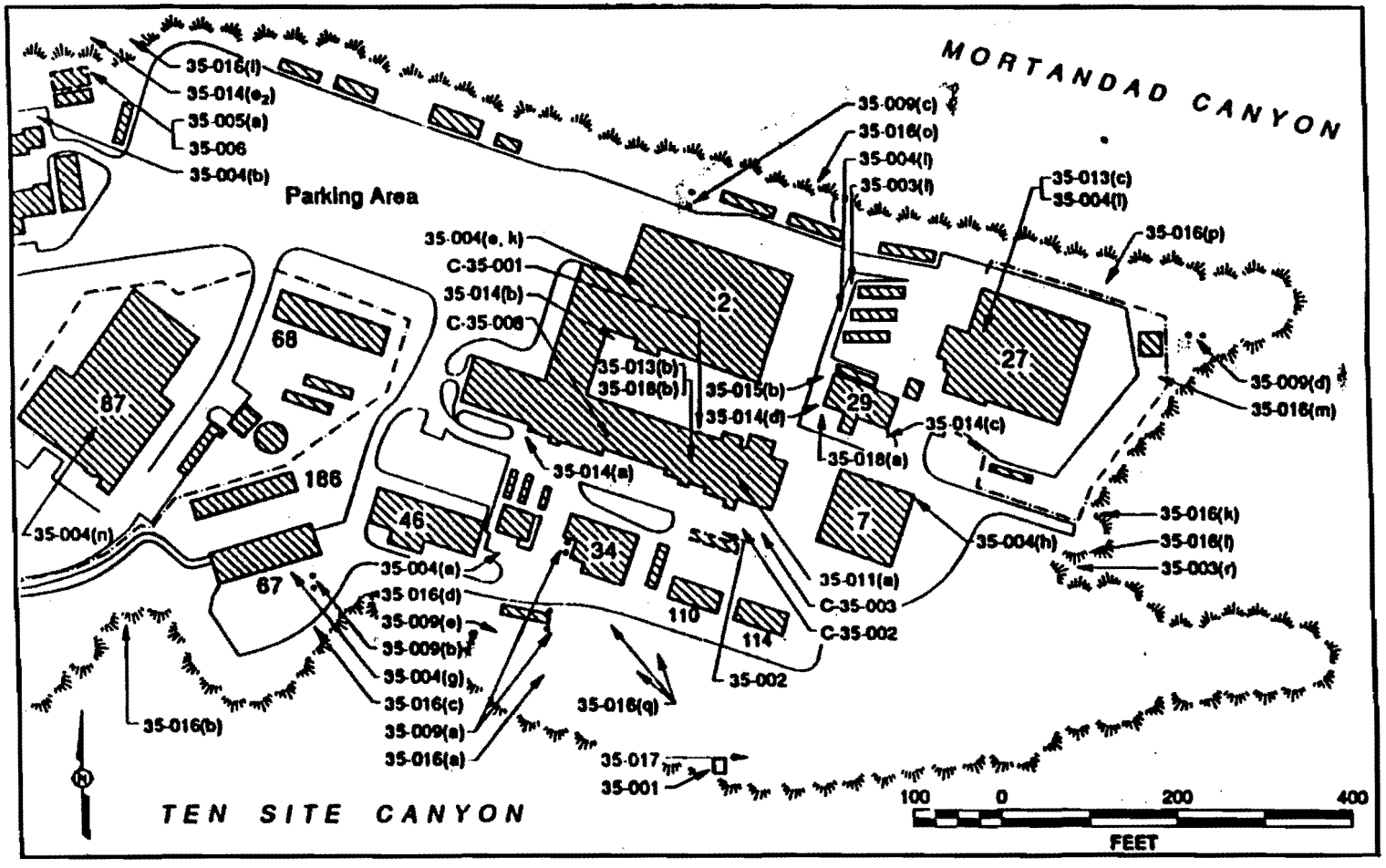


Figure 3-3. Locations of structures and SWMUs at TA-35 (LANL 1986, 04-0249).

7.7 Waste Characterization Strategy Form

The waste to be generated by the VCA activities will be the liquid and sludge contents of the septic tanks that will be removed and properly disposed of. The contents of each tank was sampled and analyzed as part of the RFI for each PRS, and waste profile forms have been generated from the RFI data. Supplemental sampling of the tanks was performed to ascertain if radioactive components are present in the tanks. PPE generated by the activities may be stored in a satellite accumulation area for profiling and appropriate disposal.

The approved Waste Characterization Strategy Form and the approved Waste Profile Forms are attached.

This page intentionally left blank.

WASTE CHARACTERIZATION STRATEGY FORM
for VCAs at PRS Nos. 35-009(a, b, c, and d)

OU NUMBER	PRS/SWMU NUMBER	TITLE
1129	35-009(a, b, c, and d)	Abandoned Septic Systems

Name: Leslie Sontag, FTL	**Date:** 2-26-1996
FPL: Allyn Pratt, EM/ER	**WMC:** Deba Daymon
Type of Activity: Voluntary Corrective Actions	

Site Description:

PRS Nos. 35-009(a, b, c and d) are abandoned septic systems that served TA-35 between 1951 and 1990. The septic systems handled sanitary wastes from various laboratories at TA-35, and may have received a wide variety of industrial wastes, including radionuclides.

PRS No. 35-009(a) is located at the southeastern portion of TA-35 near building TA-35-34. This PRS consists of the site of an abandoned septic system that was formerly connected to Building TA-35-2 and associated buildings. Structures associated with PRS No. 35-009(a) include a 1,500-gal. septic tank (TA-35-14), a "dosing chamber" septic tank (TA-35-15), a "distribution box" manhole to the leach field (TA-35-16), and the leach field.

PRS No. 35-009(b) is the site of an abandoned septic system that is located near the southern edge of Ten Site Mesa, south of building TA-35-67. The PRS includes a septic tank (structure TA-35-76), a dosing chamber (TA-35-77), a distribution box manhole, and an associated leach field. PRS No. 35-009(c) is an abandoned septic system located near northeast end of Ten Site Mesa, north of building TA-35-2. Structures associated with 35-009(c) include TA-35-44, a 1,290-gal. septic tank and TA-35-45, a distribution box. The leach fields of PRS No. 35-009(c) are located adjacent to the northern edge of Ten Site Mesa. PRS No. 35-009(d) is located at TA-35, at the northeastern end of Ten Site Mesa. PRS No. 35-009(d) is a former septic system and includes structures TA-35-64, a manhole, TA-35-65, a 1,600-gal. tank, and a leach field.

Phase I RFI soil samples and unfiltered water samples (collected from each of the septic tanks) were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, alpha-, beta-, and gamma-radiation. No hazardous or radioactive constituents were detected in any of the soil samples. VOCs were detected in the unfiltered water samples collected from the tanks though only one, 1,1,1-trichloroethane, is a possible RCRA hazardous waste and it was only found in the sample collected from the PRS No. 35-009(b) septic tank. Metals were detected in each water sample, though only arsenic, barium, cadmium, chromium, lead, mercury, and selenium were detected above SALs in the sample collected at PRS 35-009(c). All metals which were detected are present at concentrations below TC regulatory thresholds.

Investigation or Remediation Waste Description and Volume Estimate:

Waste Types: The possible chemicals of concern (COCs) in the liquid/sludge that will removed from the septic tanks during these Voluntary Corrective Actions are VOCs, and radioactivity. Metals are not considered to be COCs as all detected metals are present at concentrations below TC regulatory thresholds.

Waste Types/Volumes: Waste generated from remediation activities is expected to include: PPE (solid waste - four 5-gallon drums); plastic and miscellaneous disposable sampling equipment, and decontamination solids (four 5-gallon drums); and septic tank residual liquid/sludge and pressure-wash decontamination fluids (worst case estimates 1100 gallons per septic tank).

Waste Packaging: 5 gallon DOT polyethylene drums for the PPE. Tank contents will be removed from the tanks and transported to the disposal site by vacuum/pumper truck. Tank contents will not be removed until appropriate disposal arrangements have been made. If the septic tank waste volumes are as expected, all liquid/sludge waste from the four septic tanks systems will be removed and disposed simultaneously using the same vacuum/pumper truck.

Characterization Strategy:

During the RFI activities, liquid/sludge samples were collected from each septic tank and analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals. Based on the nature of these PRSs (sanitary septic systems) and knowledge of process of the contributing waste streams, PCBs are not expected to be present and therefore, analyses were not performed. (See Section 7.10 in the Work Plan for OU1129.) For waste characterization purposes, supplemental liquid/sludge samples were collected from each tank for analyses for gross α, β, γ, and tritium. Analytical data from the RFI sampling event and the waste characterization sampling event will be used for waste characterization.

PPE will be characterized by association with the RFI and the supplemental waste characterization analytical results of the liquid samples collected from the septic tanks, and by knowledge of field decon procedures.

Preliminary RCRA Determination:

☒ **No 90-day Storage Requirement (non-RCRA)**
Describe how waste will be stored/handled:

It is not expected that waste from the septic tanks contents will be stored or handled on site. Arrangements are being made to use a vacuum/pumper truck to remove the contents of the tanks, and then transport the waste to a pre-arranged off-site disposal facility. PPE waste from 35-009(b) may be store in a satellite hazardous waste storage area if it is determined, by best professional judgment of the FTL, that the PPE came into contact with any hazardous constituents.

☐ **90-Day Storage Requirement (RCRA)**

Analyte Suite:**

Analyte Category	Analytical Method	Direct Sampling of Containerized Waste	Acceptable Knowledge: Existing Information Present	Acceptable Knowledge: Existing Information Absent	Acceptable Knowledge: Data from Site Characterization
Total Metals	ICPES/XRF	☐	☒	☐	☐
Volatile Compounds	8260	☐	☒	☐	☐
Semi-Volatile Compounds	8270	☐	☒	☐	☐
Organochlorine Pesticides and PCBs	n/a	☐	☐	☒	☐
High Explosive Compounds	n/a	☐	☐	☒	☐
Gross Alpha	Gross α	☐	☒	☐	☐
Gross Beta	Gross β	☐	☒	☐	☐
Gross Gamma	Gross δ	☐	☒	☐	☐
Tritium	Liq. Scint.	☐	☒	☐	☐
Asbestos	n/a	☐	☐	☒	☐
TCLP*	n/a				
Metals		☐	☐	☐	☐
Organics		☐	☐	☐	☐
Inorganics		☐	☐	☐	☐
Pesticides, herbicides, fungicides		☐	☐	☐	☐

* TCLP analyses not performed on water samples
** Waste Profile forms have been completed.

Signatures:

Telephonic approval of Debra Daymon by [illegible] Jacobson
ER Waste Management Representative — Date 3/20/96

[illegible]
CST Representative — Date 2/29/96

[illegible] Jacobson
Form Author — Date 2/29/96

LOS ALAMOS NATIONAL LABORATORY
WASTE PROFILE SYSTEM
WPF #: 23238

Generator :	PRATT, ALLYN	MS :	J521	PH :	79768	Z#:	099718
WMC :	DAYMON, DEBA	MS :	M327	PH :	6621398	Z#:	117207
CSR :	WINCH, MARY JANE	MS :	J593	PH :	75905	Z#:	114734
Status :	ACTIVE	Activated Date :	04-MAR-96			Expired Date:	05-MAR-97
Account Info-CC :	5613	PC: MA4X	CA :	5502	WP :	6000	VI:
Group :	EMER		TA :	35	BLDG :	000067	ROOM: 0

RMMA : N/A
Waste Accumu : N/A
Method of Char : ANALYSIS ATTACHED

Waste Type : PROCESS WASTE/SPENT CHEMICAL
Waste Classes: NON-RADIOACTIVE
ONE TIME GENERATION
WASTE WATER
Assoc Docum: N/A

Waste Category: SOLVENT

Waste Sources : REMEDIATION
SANITARY SLUDGE

Waste Matrix : AQUEOUS LIQUID

Matrix Type : HOMOGENEOUS

Waste/Proc Desc : LIQUID WASTE CONTENTS OF SANITARY SEPTIC SYSTEM PRS 35-009(B). SYSTEM WAS IN OPERATION BETWEEN MID 1950'S AND 1991. WASTESTREAM CONSISTS OF SYSTEM CONTENTS (LIQUID/SEDIMENT). DIRECT SAMPLING RESULTS ATTACHED. SYSTEM IS LOCATED JUST SOUTH OF TA-35-67. SEPTIC TANK STRUCTURE NUMBER IS TA-35-76. WASTESTREAM VOLUME IS ESTIMATED AT ~ 1000 GALLONS.

Ignitability : NOT IGNITABLE

Corrosivity : 6.1 - 9.0

Reactivity : NON REACTIVE

Boiling Point : GREATER THAN 95 DEGREES F.

Toxicity Characteristic Metals :

Contaminant	LTR	Min	Max	Unit	Method
ARSENIC	Y				TOTA
BARIUM	Y				TOTA
LEAD	Y				TOTA

Toxicity Characteristic Organic Compounds: N/A

Additional Chemical Constituents and Contaminants :

Constituent	CAS NO	MIN	MAX	UOM
1,1,1-TRICHLOROETHANE		.063	.063	PPM
1,1,2-TRICHLORO-1,2,2-TRIFLUORO ETHANE (FREON)		.0057	.0057	PPM
1,1-DICHLOROETHANE		.098	.098	PPM
CHLOROETHANE		.023	.023	PPM

LIQUID (WATER)	**95**	**98**	**%**
SOLID (SEDIMENT)	**2**	**5**	**%**

Radiological Characteristics: N/A

Waste Water Contaminants:

Contaminant	LTR	Min	Max	Unit	Method
COPPER	**Y**				**TOTA**

Maximum daily flow when discharge occurs: 1000 GAL
Average daily flow when discharge occurs: 1000 GAL
Estimated number of days dicharge will occur: 1

WASTE CHARACTERIZATION INFORMATION

Radioactivity Category : **NON-RADIOACTIVE**

Waste Classification : **HAZARDOUS WASTE**

EPA Hazardous Waste Code : **F002**

LOS ALAMOS NATIONAL LABORATORY
WASTE PROFILE SYSTEM
WPF #: 23239

Generator :	PRATT, ALLYN	MS :	J521	PH :	79768	Z#:	099718
WMC :	DAYMON, DEBA	MS :	M327	PH :	6621398	Z#:	117207
CSR :	WINCH, MARY JANE	MS :	J593	PH :	75905	Z#:	114734
Status :	ACTIVE	Activated Date :	01-MAR-96			Expired Date:	02-MAR-97
Account Info-CC :	5613	PC: MA4X	CA :	5502	WP :	6000	VI:
Group :	EMER		TA :	35	BLDG :	000033	ROOM: 0

RMMA : N/A
Waste Accumu : N/A
Method of Char : **ANALYSIS ATTACHED**

Waste Type : **PROCESS WASTE/SPENT CHEMICAL**
Waste Classes: **NON-RADIOACTIVE**
ONE TIME GENERATION
WASTE WATER
Assoc Docum: N/A

Waste Category: **NOT APPLICABLE**

Waste Sources : **REMEDIATION**
SANITARY SLUDGE

Waste Matrix : **AQUEOUS LIQUID**

Matrix Type : **HOMOGENEOUS**

Waste/Proc Desc : LIQUID WASTE CONTENTS OF SANITARY SEPTIC SYSTEM PRS 35-009(D). SYSTEM WAS IN OPERATION BETWEEN MID 1950'S AND 1991. WASTESTREAM CONSISTS OF SYSTEM CONTENTS (LIQUID). DIRECT SAMPLING RESULTS ATTACHED. SYSTEM IS LOCATED E OF TA-35-33. SEPTIC TANK STRUCTURE NUMBER IS TA-35-64. WASTESTREAM VOLUME ESTIMATE IS ~ 300 GALLONS.

Ignitability : **NOT IGNITABLE**

Corrosivity : **6.1 - 9.0**

Reactivity : **NON REACTIVE**

Boiling Point : **GREATER THAN 95 DEGREES F.**

Toxicity Characteristic Metals :

Contaminant	LTR	Min	Max	Unit	Method
LEAD	Y				**TOTA**
SILVER	Y				**TOTA**

Toxicity Characteristic Organic Compounds: N/A

Additional Chemical Constituents and Contaminants :

Constituent	CAS NO	MIN	MAX	UOM
LIQUID (WATER)		**99**	**100**	**%**
SOLID (SEDIMENT)		**0**	**1**	**%**

Radiological Characteristics: N/A

Waste Water Contaminants : N/A
Maximum daily flow when discharge occurs: 300 GAL
Average daily flow when discharge occurs: 300 GAL
Estimated number of days dicharge will occur: 1

WASTE CHARACTERIZATION INFORMATION

Radioactivity Category : **NON-RADIOACTIVE**

Waste Classification : **NON-HAZARDOUS CHEMICAL WASTE**
NEW MEXICO SPECIAL WASTE

EPA Hazardous Waste Code : N/A

LOS ALAMOS NATIONAL LABORATORY
WASTE PROFILE SYSTEM
WPF #: 23240

Generator :	PRATT, ALLYN	MS :	J521	PH :	79768	Z#:	099718
WMC :	DAYMON, DEBA	MS :	M327	PH :	6621398	Z#:	117207
CSR :	WINCH, MARY JANE	MS :	J593	PH :	75905	Z#:	114734
Status :	ACTIVE	Activated Date :	04-MAR-96			Expired Date:	05-MAR-97
Account Info-CC :	5613	PC: MA4X	CA :	5502	WP :	6000	VI:
Group :	EMER		TA :	35	BLDG :	000261	ROOM: 0

RMMA : N/A
Waste Accumu : N/A
Method of Char : **ANALYSIS ATTACHED**

Waste Type : **PROCESS WASTE/SPENT CHEMICAL**
Waste Classes: **NON-RADIOACTIVE**
ONE TIME GENERATION
WASTE WATER
Assoc Docum: N/A

Waste Category: **SOLVENT**

Waste Sources : **REMEDIATION**

Waste Matrix : **AQUEOUS LIQUID**

Matrix Type : **HOMOGENEOUS**

Waste/Proc Desc : LIQUID WASTE CONTENTS OF SANITARY SEPTIC SYSTEM PRS 35-009(C). SYSTEM WAS IN OPERATION BETWEEN MID 1950'S AND 1991. WASTESTREAM CONSISTS OF SYSTEM CONTENTS (LIUQID). DIRECT SAMPLING RESULTS ATTACHED. SYSTEM IS LOCATED JUST W OF TA-35-261. SEPTIC TANK STRUCTURE NUMBER IS TA-35-44. WASTESTREAM VOLUME IS ESTIMATED AT 650 GALLONS.

Ignitability : **NOT IGNITABLE**

Corrosivity : **6.1 - 9.0**

Reactivity : **NON REACTIVE**

Boiling Point : **GREATER THAN 95 DEGREES F.**

Toxicity Characteristic Metals : N/A

Toxicity Characteristic Organic Compounds: N/A

Additional Chemical Constituents and Contaminants :

Constituent	CAS NO	MIN	MAX	UOM
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON)		0	.15	PPM
1,1-DICHLOROETHANE		0	.0059	PPM
IRON		14	14	PPM
LIQUID (WATER)		99	100	%
SOLIDS (SEDIMENT)		0	1	%

Radiological Characteristics : N/A

Waste Water Contaminants : N/A
Maximum daily flow when discharge occurs: 650 GAL
Average daily flow when discharge occurs: 650 GAL
Estimated number of days dicharge will occur: 1

WASTE CHARACTERIZATION INFORMATION

Radioactivity Category : **NON-RADIOACTIVE**

Waste Classification : **HAZARDOUS WASTE**

EPA Hazardous Waste Code : **F002**

7.8 VCA Checklist and Field Work Authorization Form

The approved Voluntary Corrective Action (VCA) Checklist and Field Work Authorization Form is attached.

This page intentionally left blank.

Voluntary Corrective Action (VCA)
Checklist and Field Work Authorization Form

PRS Nos. 35-009(b, c, and d) **HSWA or AOC**

√ COPC(s) defined.

√ Nature and extent Defined or field screening method available to guide where not defined.

√ Remedy is obvious.

√ Time for removal is less than 6 months.

√ Remedy is final.

√ Land use assumptions straightforward.

√ Treatment, Storage, Disposal Facilities are available for waste type and volume.

√ Cleanup cost is reasonable for the planned action, and meets accelerated decision logic criterion for decision to proceed with VCA.

Explain criteria not checked above. _____

Through reviewing the above criteria associated with this site, I believe that a VCA is the appropriate Accelerated Cleanup approach

Allyn Pratt, FU 4, FPL — Date 3/18/96

Bob Simeone, FPC — Date 3/19/96

The undersigned have reviewed the final plan and believe that it fully satisfies the appropriate Accelerated Cleanup approach.

Allyn Pratt, FU 4, FPL — Date 3/18/96

Bob Simeone, FPC — Date 3/19/96

Through reviewing the VCA Plan, for site(s) PRS Nos. 35-009(b, c, and d), and believing that the above criteria have been met, I authorize the fieldwork to proceed.

DOE ER Program Manager — Date 3/19/96

7.9 Cost Estimate

Table 4 shows the estimated cost for completing the VCA activities.

TABLE 4

ESTIMATED COST WORKSHEET

Category	Rate	Units	Cost
Field Preparation Activities			
VCA plan preparation	$1,000/day	5 days	$5,000
VCA plan technical edit and review	$1,000/day	1 day	$1,000
Preparation of waste characterization form	$700/day	2 days	$1,400
Preparation of Stormwater Pollution Prevention Plan	$700/day	1.5 days	$1,050
Preparation of Spill Prevention, Control, and Countermeasures Plan	$700/day	1.5 days	$1,050
Preparation of site-specific health and safety plan	$700/day	4 days	$2,800
Subtotal			**$12,300**
Personnel Costs			
Field team (field team leader and site safety officer)	$1,000/day	5 days	$5,000
Subtotal			**$5,000**
Field Activities			
Subcontractor (vacuum truck)	$500/day	3 days	$1,500
Subcontractor (concrete and mixing truck)	to load $60/yd^3	50 yd^3	$3,000
Subcontractor (transportation and disposal of waste)	$2.00/gal.	5,000 gal.	$10,000
Subtotal			**$14,500**
Analytical Costs for Waste Disposal			
Radiological van	$2,000/day	1 day	$2,000
Subtotal			**$2,000**
Final Activities			
Acceptance inspection	$500/day	1 day	$500
Final report preparation	$1,000/day	8 days	$8,000
Final report technical edit and review	$1,000/day	1.5 days	$1,500
Subtotal			**$10,000**
Total Estimated Cost			**$43,800**

REFERENCES

LANL (Los Alamos National Laboratory), May 1991. "Environmental Restoration Standard Operating Procedures," Vol. I–III, Los Alamos, New Mexico. **(LANL 1991, ER ID Number 21556)**

LANL (Los Alamos National Laboratory), March 1992. "Administrative and Quality Procedures for Environmental Restoration," Los Alamos, New Mexico. **(LANL 1992, ER ID Number 11686)**

LANL (Los Alamos National Laboratory), May 1992. "RFI Work Plan for Operable Unit 1129," Los Alamos National Laboratory Report LA-UR-92-800, Los Alamos, New Mexico. **(LANL 1992, ER ID Number 7666)**

LANL (Los Alamos National Laboratory), 1994. "Site Development Plan: Annual Update 1994," Los Alamos National Laboratory Publication LALP-94-21, Los Alamos, New Mexico. **(LANL 1994, ER ID Number 53451)**

LANL (Los Alamos National Laboratory), March 1996. "Quality Assurance Project Plan Requirements for Sampling and Analysis," Los Alamos National Laboratory Report LA-UR-96-441, Los Alamos, New Mexico. **(LANL 1996, ER ID Number 53450)**