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Los Alamos Area Office, MS A316
Environmental Restoration Program
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APR 1997 RECEIVED

Date: April 21, 1997
Refer to: EM/ER:97-123

Mr. Stu Dinwiddie
NMED-HRMB
P.O. Box 26110
Santa Fe, NM 87502

SUBJECT: IA PLANS FOR PRSs IN TA-15 AND IA COMPLETION REPORT FOR TA-35, PRSs 35-003(d, l, and q)

Dear Mr. Dinwiddie:

In response to your request of April 9, 1997, which was received on April 16, 1997, enclosed for your information please find the Interim Action (IA) Plans for the potential release sites (PRSs) in Technical Area (TA) 15 and the IA Completion Report pertaining to PRSs in TA-35. The Los Alamos National Laboratory's Environmental Restoration Project has developed these plans and this report to address stabilization activities that would inhibit or slow down contaminant migration until final site remediation can take place.

The enclosed documents were determined to be unacceptable by the Los Alamos Area Office. They are being submitted under the "Duty to Provide Information" provision of the New Mexico Hazardous Waste Management Regulations, 20 NMACH.1, as noted in your letter of April 9, 1997.

It should be noted that either through the result of a typographical error or some other form of miscommunication, you are requesting an IA plan for a unit which has not been developed. A plan has been developed for PRS 15-008(a) but not for PRS 15-008(b), which you requested.

If you have any further questions, please call Dave McInroy at (505) 665-0819 or Joe Mose at (505) 667-5808.

Sincerely,

Jorg Jansen, Program Manager
LANL/ER Project

Sincerely,

Theodore J. Taylor, Program Manager
DOE/LAAO

JJ/TT/rfr

3937

Enclosures: (1) IA Plan for TA-15, PRSs 15-007(c), 15-004(f), and 15-008(a)
(2) IA Completion Report for TA-35, PRSs 35-003(d, l, and q)

Cy (w/ encs.):
G. Gould, EES-15, MS G787 (TA-15 only)
M. Gilgosch, LAAO, MS A316 (TA-15 only
D. Griswold, AL-ERD, MS A906
J. Harry, EES-5, MS M992
M. Leavitt, NMED-GWQB
N. Naraine, DOE-HQ, EM-453
D. Neleigh, EPA, R.6, 6PD-N
A. Pratt, EES-13, MS J521 (TA-35 only)
C. Rodriguez, CIO/ER, MS M769
B. Simeone, LAAO, MS A316 (TA-35 only)
T. Taylor, LAAO, MS A316
J. White, ESH-19, MS K498
S. Dinwiddie, NMED-HRMB,
B. Garcia, NMED-HRMB
J. Kieling, NMED-AIP, MS J993
J. Parker, NMED-OB
G. Saums, NMED-SWQB
S. Yanicak, NMED-AIP, MS J993
EM/ER CT # C256, MS M992
RPF, MS M707

Cy (w/o encs.):
T. Baca, EM, MS J591
D. Bradbury, EM/ER, MS M992
T. Glatzmaier, DDEES/ER, MS M992
D. McInroy, EM/ER, MS M992
J. Mose, LAAO, MS A316
W. Spurgeon, DOE-HQ, EM-453
J. Vozella, LAAO, MS A316
D. Woitte, LC-GEN, MS A187
K. Zamora, LAAO, MS A316
EM/ER File, MS M992

Interim Action Plan for

Potential Release Sites
at TA-15

15-004(f), Firing Sites D, E, and F
15-008(a), Surface Disposal

Field Unit 2

Environmental
Restoration
Project

December 1996

A Department of Energy
Environmental Cleanup Program

LANL
2 / 1086 / 15

Los Alamos
NATIONAL LABORATORY

LA-UR-96-4897

[redacted]

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INTERIM ACTION PLAN FOR POTENTIAL RELEASE SITES 15-004(f), FIRING SITES D, E, AND F 15-008(a), SURFACE DISPOSAL

1.0 Rationale and Objective of Interim Action

Chunks of uranium and depleted uranium (DU) are visible across the area containing both Potential Release Sites (PRSs) 15-004(f) and 15-008(a). The exposed uranium and DU pose an environmental hazard to wildlife that might ingest the uranium and DU. Additionally, during precipitation events the uranium and DU on the site is subject to weathering and possible dispersion or migration, thus creating a larger area of contaminants in the future. Elimination of the exposed uranium and DU would reduce the exposure to wildlife and possible weathering and migration of the surface uranium and DU.

Pieces of high explosives that are noted at the site will be flagged for the user group. Debris (wire, etc.) will be segregated and screened for radiation.

This interim action is not considered an accelerated cleanup; a full cleanup which includes subsurface removal is being proposed for the future and will be conducted in accordance with Environmental Restoration Project policy. This interim action will be conducted to reduce risk to wildlife from effects of contamination and prevent further weathering and migration of uranium and DU during precipitation events while the final remedy is being prepared and submitted for approval.

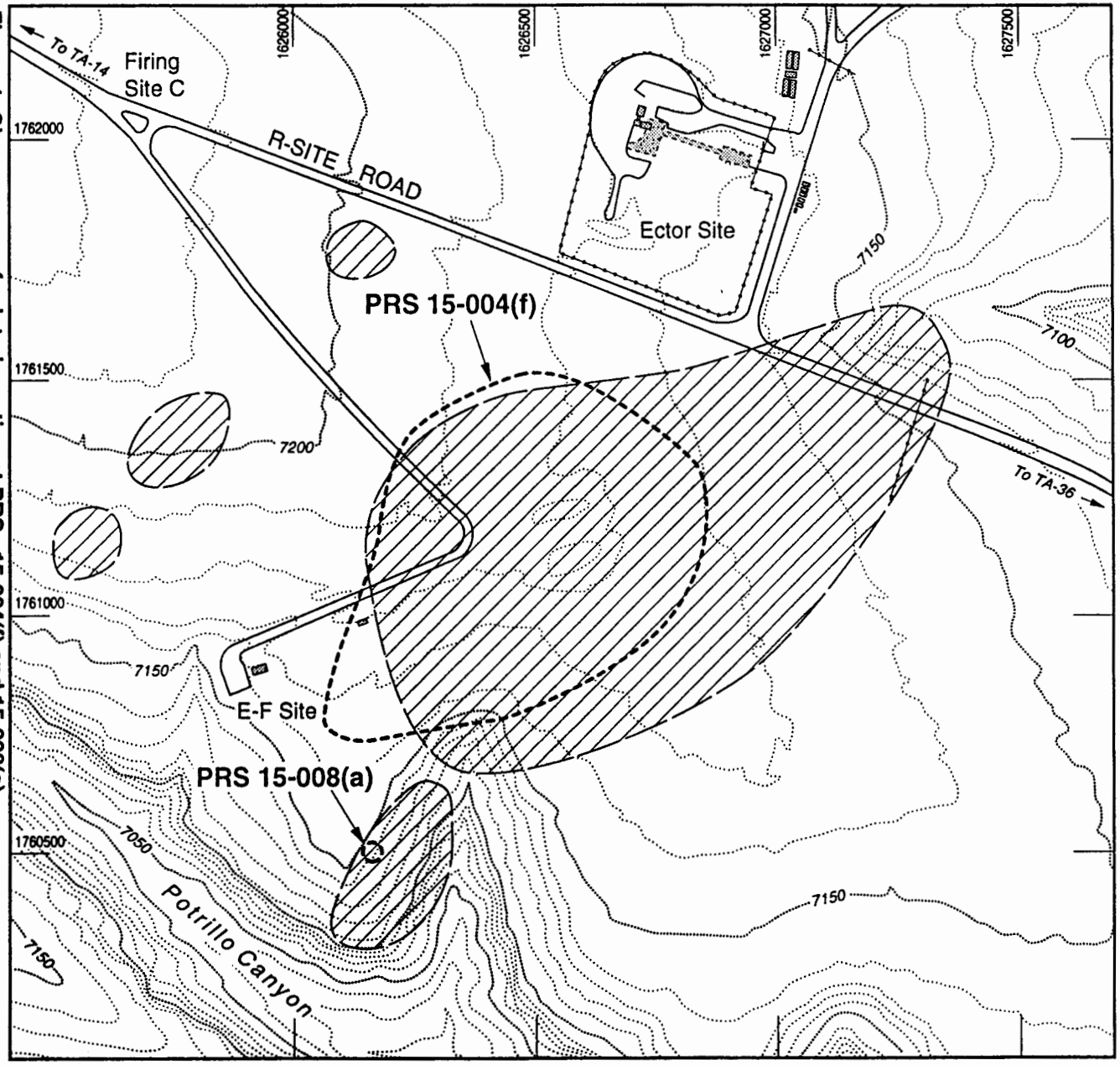
2.0 Site Description and Characterization Data

PRS 15-004(f), consisting of inactive Firing Sites D, E, and F, located at Technical Area (TA) -15, was extensively used for testing at the Laboratory. Between 1945 and 1957, an estimated 48 tons of natural uranium was expended on E-F site. After 1957, approximately 22 tons DU was expended (LANL 1993, 1087). Although HEs were used to detonate the test, HE was not itself the test. The HE was expected to be completely consumed during tests, and only HE residuals are believed to be present at the site (LANL 1993, 1087).

Chunks of uranium and DU are visible across the site. Presence of radionuclides at the site has been confirmed by aerial radiological studies (LANL 1993, 1987) and screening techniques (LANL 1995 1325).

PRS 15-008(a), Surface Disposal, includes two small areas on the edge of a trough into Potrillo Canyon. These areas of debris include pieces of metal, plastics, electrical cable, soil, and other miscellaneous trash. The debris looks like discrete dump-truck loads (LANL 1993, 1087). These two areas were in the grid that was used for characterization of the E-F Firing Site during Phase I investigation, and their proximity has made it logical to study and clean them as one unit. See Figure 1. Other PRSs within the grid and sample area, PRS 15-009(e), and Area of Concern C-15-004, are being managed separately.

The area supports a disturbed grassland community that merge into ponderosa pine forest on the mesa top and canyons. Numerous wildlife species, including deer, elk, small mammals, and migratory birds use the area and are exposed to uranium and DU at the site.



Above-ground structure
Underground structure
Cleanup area
Paved road
Fence
PRS boundary
Contour interval 10 ft

0 100 200 300 400 500 ft

Source: FIMAD ARCVIEW 5/2/96
Modified by:
cARTography by A. Kron 5/20/96

N

Figure 1.
Cleanup areas for interim action at PRSs 15-004(f) and 15-008(a).

Figure 1 Cleanup areas for interim action at PRSs 15-004(f) and 15-008(a)

3.0 Interim Action

3.1 Description

This interim action consists of visually locating uranium and removing identified pieces. A radiation technician will use instruments to assist in locating and verifying that the identified pieces are uranium. If HE is noted, it will be flagged for removal by the user group and recorded in the daily activity log book. The surface soil will not be disturbed unless larger pieces of uranium are identified under the surface. These PRSs are easily accessible with a paved road to the interior of the area.

Before work actually begins, the appropriate health and safety screening will be performed, using the site-specific health and safety plan requirements (Annex 1). The radiation technician will screen the area using two Ludlum Model 2221 Scalar/Rate Meter single-channel analyzers, one with an Eberline SPA-3 scintillation probe and one with a Ludlum Model 44-9 pancake geiger-mueller detector, both used for taking direct readings near the ground surface.

Water sprayers will be used for general dust suppression while the field team is on site, but application of water will be limited and will not result in runoff.

Survey markers set in place on a 50-ft grid during the clean-up will be used to delineate areas for methodical surveys. Team members will walk across the site in groups of two or more at a distance from each other of about 5 ft, and comb the area in a sweep. The team members will use the 50-ft grid points to informally keep track of the portion of the area that has been swept. The sweep involves visually scanning a small area, identifying pieces of uranium and DU. The radiation technician can confirm the presence of radioactivity if the team member is unsure of the identified piece.

The team will collect pieces of uranium and DU and place them into 55-gal. drums using hand tools or sampling spoons. Large amounts of soil will not be placed in the drums, although soil that adheres to the uranium and DU may also be placed in the drums. The drums must be labeled with low-level radioactivity signs, in accordance with the LANL Radiological Control Manual.

Although HE is not expected at the site, and was not present in the characterization sample analyses, if HE is noted, it will flagged for removal by the user group.

After removal of the visible uranium and debris, tools and equipment will be decontaminated. The decontamination fluid will be stored in bung-top 55-gal. drums and will be sampled for characterization. PPE and equipment will be cleaned, or the uncleanable portions will be cut out and disposed of as low-level radioactive waste.

3.2 Function of IA in Source Reduction

The primary pathway of concern for wildlife exposure is ingestion of small pieces of uranium and DU, and of drinking from pooled water that has dissolved U and DU. Removal of visible surface uranium pieces will reduce the source of small, weathered pieces or uranium and DU that may be ingested by wildlife.

The removal of surface U and DU will also reduce the possibility of further contaminants spread, by the prevention of possible deterioration and migration of the uranium and DU during precipitation events.

4.0 Monitoring and Confirmatory Activities

This section is not applicable. Monitoring and confirmatory activities may be a part of the final remedy, but this interim action is being conducted to reduce risk to wildlife and human health while the final remedy is being determined, and monitoring and confirmatory activities are not required.

5.0 Maintenance and Inspection

This section is not applicable.

6.0 Waste Management

Wastes expected to be generated during the interim action at this PRS are identified in Table 1.

TABLE 1
Expected Waste Types and Volumes

Item	Waste Type	Anticipated Volume
Uranium and DU	Low-level radioactive	< 2 55-gal. drums
Decontamination water	Liquid, low-level radioactive	< 1 55-gal. drum
Uncontaminated items from activities	Solid	< 1 55-gal. drum
Contaminated items from activities	Solid	< 1 55-gal drum

A Waste Characterization Strategy Form (WCSF) has been submitted to Chemical and Mixed Waste Services Group (CST-5) and Environmental Services (ESH-19) for review. The waste characterization strategy for the waste type described in the WCSF are briefly described below.

The drums of uranium and DU will be labeled and held onsite.

PPE and/or equipment that is either visibly contaminated or exhibits radioactivity above the levels described will be considered low-level radioactive waste and will be characterized using sampling results of the decontamination water, below. The remaining PPE and equipment will be considered non-radioactive, using the methods described in LANL-ER-SOP-10.07 (LANL 0875). The volume of non-radioactive PPE and waste sampling equipment is expected to be less than one 55-gal. drum.

Decontamination liquids, consisting of water and Liquinox® may be radioactive. One grab sample of the decontamination liquid will be analyzed for toxic characteristic (TCLP) metals, HE, semivolatile organic compounds, gamma scan, LP, and total uranium. The drum containing the liquid waste will be labeled with the PRS number. The volume of decontamination liquid is expected to be less than 25 gal.

6.1 Method of Management and Disposal

Waste Profile Forms must be completed for all waste that is being offered for disposal.

Drums of uranium and DU will be stored onsite until they are transferred to TA-54 for final disposal as low-level radioactive waste.

Decontamination liquid will be held in a labeled drum. If sample results indicate that the liquid is radioactive, it will be transferred to CST-13, Radioactive and Industrial Waste Water, for final disposal. Uncontaminated liquid will be disposed of appropriately.

All drums containing waste that is potentially contaminated will be stored onsite, on pallets, in an approved < 90 day storage until sample results have been evaluated. Drums of solid contaminated material will be transferred to CST-14, and drums of liquid radioactive waste will be transferred to CST-

13, Radioactive and Industrial Waste Water for final disposition, provided the levels of metals and organic compounds in the liquid meet the acceptance criteria for wastewater treatment.

If results of sampling indicate that the waste is mixed waste, either the liquid will be treated to remove the metals, or provisions will be immediately made to manage the liquid as mixed waste.

All PPE and equipment will be surveyed for radioactivity using LANL-ER-SOP-10.07 (LANL 0875), by hand-held instruments. PPE and other equipment determined to be uncontaminated following guidance in LANL-ER-SOP-01.06 (LANL 0875), may be removed immediately to the County landfill.

7.0 Schedule

Because the surface area of the site is large, about 250,000 ft^2, this activity will take eight to 12 weeks to complete. To date, about 30,000 ft^2 of surface soil has been cleaned up, while the details of this plan were being discussed between LANL and DOE. Tentative start date is April 1997.

8.0 References

LANL (Los Alamos National Laboratory), July 1993. "RFI Work Plan for Operable Unit 1086,) Los Alamos National Laboratory Report LA-UR-92-3968, Los Alamos, New Mexico. (LANL 1993, 1088)

LANL (Los Alamos National Laboratory), October 1995. "RFI Report for Field Unit 2 (OU 1086), PRSs 15-004(b,c), 15-004(a,d), 15-004(f), 15-007(b), 15-008(b), 15-012(b), 15-009(j), Los Alamos National Laboratory Report LA-UR-95-3738, Los Alamos, New Mexico. (LANL 1995, 1325)

LANL (Los Alamos National Laboratory), "Los Alamos National Laboratory Environmental Restoration Program Standard Operating Procedures," Los Alamos National Laboratory, Los Alamos, New Mexico. (LANL 0875)

LANL (Los Alamos National Laboratory). "LANL Radiological Control Manual," Los Alamos National Laboratory, Los Alamos, New Mexico. March 1994

ANNEXES

Annex 1, Site-Specific Health and Safety Plan

Annex 2, Interim Action Approval Form

Annex 3, Characterization Strategy Form

ANNEX 1

SITE-SPECIFIC HEALTH AND SAFETY PLAN

The Site-Specific Health and Safety Plan for all Technical Areas (TAs) -12, -14, and -15 for all field activities for FY 1996 was approved on May 24, 1996.

ANNEX 2

INTERIM ACTION PLAN
APPROVAL/DISAPPROVAL FORM

PRS(s) 15-004(f) & 15-008(a)

The undersigned have reviewed the Interim Action Plan and believe that a interim action is appropriate.

FPL _____ Date 4/8/97

FPC _____ Date _____

I, Theodore J. Taylor, DOE-LAAO, **APPROVE** _____, **DISAPPROVE** _____ the accompanying Interim Action Plan for PRS(s) 15-004(f) & 15-008(a), TA-15.

The following reasons reflect the decision for disapproval:

_____

_____

_____

_____

_____

_____

_____

Signed:_____ Date:_____

ANNEX 3

CHARACTERIZATION STRATEGY FORM

CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-004(f) and 15-008(a)	Firing Site E-F and Disposal Area
All Waste Types or Wastestreams: Pieces of natural and depleted uranium, PPE and waste handling equipment, and decontamination liquid		

Completed By: J. W. Heyser	Date: September 3, 1996
FPL: T. E. Gene Gould	WMC: Bob Catherwood, ESA-EPE
Type of Activity (site investigation, EC, etc.): Interim Action	

Description of the Activity (e.g., drilling, surface sampling, excavation and recontouring, soil washing, etc.)
The Interim Action (IA) will consist of removing visible pieces of natural and depleted uranium from the ground surface. Surface soil will not be disturbed unless pieces of uranium are identified that protrude from under the surface. HE-contaminated soil is not expected to be present (see site history below). However if HE-contaminated soil is present, HE would not be expected to be present on the uranium in sufficient quantities to cause the uranium to be reactive or explosive. Based on personal communication with Roy Lucht (DX-4), pieces of HE less than 1 millimeter are not a concern from an explosion standpoint. Each piece of uranium will be visually inspected to ensure that it is not contaminated with excess soil that could cause it to be explosive. Pieces of HE are not expected to be present (see site history below). However if discrete pieces of HE are visible on the ground surface, they will be flagged and picked up by the user group (DX-4) if the HE poses a threat to health and safety. Because the pieces of HE will be generated, packaged, and stored, and disposed of by DX-4, they are not addressed in this CSF.

Acceptable Knowledge
Site Description, Site History, and Historical Waste Generating Processes or Activities: (Include dates for site history):
PRS 15-004(f), Firing Site E-F, was the most extensively used firing site at the Laboratory and was established to conduct tests using up to 2,500 lbs. of explosives. This site was extensively used until 1973 and last used in 1981. Between 1945 and 1957, approximateiy 43,000 kg. of natural uranium was expended. After 1957, approximately 20,000 kg. of DU was expended. In the 1982 aerial survey, the main gamma rays were from protactinium (Pa-234m), a daughter product in the decay chain of U-238. No major effort has been made at the E-F site to remove or remediate dispersed hazardous materials. Chunks of uranium metal and yellow-colored uranium oxides are still present. Beryllium, lead and mercury were also used in some explosions. HE and their residues are not thought to be present because the tests only used HE to drive the explosions or implosions; the tests did not consist of the HE itself. Therefore, complete burning of the HE is expected.

PRS 15-008(a) consists of two small surface disposal areas at the canyon edge where debris from explosions at the E-F site were deposited. The debris consists of metal pieces, soil, pieces of plastic, rocks and pebbles, short pieces of electrical cables and other miscellaneous debris. This debris is probably contaminated with uranium, beryllium, lead, and mercury. This debris will not be picked up during the IA. Uranium was not detected during the aerial radiological survey.

Previous Investigation Analytical Results: (Attach copy of analytical methods and results above background levels)
Phase I laboratory analyses on samples from PRS 15-004(f) included a gamma spectroscopy, isotopic and total uranium, total metals, and HE. Lead (279 mg/kg maximum) exceeded its TC screening level. The highest level for total uranium was 3,131 mg/kg and U-238 had a maximum level of 1,629 pCi/g.
At PRS 15-008(a), one sample was analyzed for the following: gamma spectroscopy, isotoptic and total uranium, HE and total metals. Lead (112 mg/kg) was above its TC screening level. Total uranium (2,180 mg/kg), U-238 (440 pCi/g) and protactinium-234M (821 pCi/gm) were present at elevated levels. RDX and HMX were only present at their MDLs.

CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-004(f) and 15-008(a)	Firing Site E-F and Disposal Area
Specific Waste Type: Pieces of DU and natural uranium		

Waste Description

Description of Waste Type, Contaminants, Volume Estimate, and Waste Packaging:

Waste Type Description: Pieces of DU and natural uranium.
Potential Regulatory Status: Low-level radioactive waste.
Volume Estimate: Less than one 55-gal. drum.
Waste packaging: DU and natural uranium pieces will be placed in a sealed containers.

Characterization Strategy

Description of Strategy:

Pieces of DU and natural uranium will be identified by visual observation and radioactive field screening. The DU will be field screened for gross alpha, beta and gamma radioactivity in accordance with the procedures contained in LANL-ER-SOP-10.07, "Field Monitoring for Surface and Volume Radioactivity Levels." Gross alpha will be screened using an alpha probe, gross beta will be screened using a beta/gamma probe, and gross gamma will be screened using two Ludlum Model 2221 Scaler/Ratemeter single channel analyzers, one with an Eberline SPA-3 scintillation probe which is equivalent to a micro-R-meter, and one with a Ludlum Model 44-9 pancake geiger-mueller detector. Each piece of uranium will be visually inspected to ensure that it is not contaminated with excess soil that could cause it to be explosive.

Waste Sampling*: (If sampling will be used, indicate how many grab or composite samples will be collected per container or volume of waste and whether the waste is considered homogeneous or heterogeneous.)

No analytical samples will be taken from the pieces of DU and natural uranium.

- Grab sampling is appropriate for wastes that are fairly homogeneous, such as liquid wastes.
- Composite sampling is appropriate for wastes that are heterogeneous, such as soil, sediment, and debris. A composite sample should consist of no more than 10 subsamples.
- A sample of homogeneous or heterogeneous waste collected for VOC analysis should consist of a grab sample rather than a composite sample.

Analytical Strategy:

Analyte Category	Analytical Method	May be Present (yes, no, unknown)	Direct Sampling of Containerized Waste	Acceptable Knowledge Existing Information	Acceptable Knowledge Data from Proposed Site Characterization
Volatile Organic Constituents		No		X	
Semi-Volatile Constituents		No		X	
Organic Pesticides		No		X	
Organic Herbicides		No		X	
Pesticides & PCBs		No		X	
PCBs		No		X	

CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-004(f) and 15-008(a)	Firing Site E-F and Disposal Area
Specific Waste Type: Pieces of DU and natural uranium		

Analytical Strategy (Continued)

Analyte Category	Analytical Method	May be Present (yes, no, unknown)	Direct Sampling of Containerized Waste	Acceptable Knowledge Existing Information	Acceptable Knowledge Data from Proposed Site Characterization
Total Metals		Yes		X	
Total Cyanide		No		X	
Other Inorganic Constituents (specify)		No		X	
High Explosive Constituents		No		X	
Asbestos		No		X	
TPH		No		X	
TCLP Metals		No		X	
TCLP Organics		No		X	
TCLP Pesticides and herbicides		No		X	
Gross Alpha	Field Screen	Yes	X		
Gross Beta	"	Yes	X		
Gross Gamma	"	Yes	X		
Tritium[1]		No		X	
Gamma Spectroscopy		Yes		X	
Isotopic Plutonium		No		X	
Total Plutonium		No		X	
Isotopic Uranium		Yes		X	
Total Uranium		Yes		X	
Strontium-90		No		X	
Americium-241		No		X	

[1] If tritium is not expected to be in the waste and the waste will not be sampled for tritium, attach a tritium statement signed by the FPL stating that based on a review of the available information and professional judgment, it is not necessary to sample for tritium at this site because there is no potential for the waste to contain added tritium due to DOE operations.

CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-004(f) and 15-008(a)	Firing Site E-F and Disposal Area

Specific Waste Type: Pieces of DU and natural uranium

Preliminary RCRA Determination

Based on available information, indicate the waste and whether it could potentially be any of the wastes as defined in 40 CFR, Part 261. List the F-, D-, K-, P-, or U-category and number.

DU and natural uranium are radioactive wastes. They are not expected to be contaminated with RCRA-regulated levels of metals or listed constituents.

Preliminary RCRA Status

__X__ Non-RCRA: (No 90-Day Storage Requirement)
Describe how waste will be stored/handled:

Wastes will be stored as radioactive waste (see below).

____ RCRA: (90-Day Storage Requirement)
Waste will be stored/handled in accordance with 20 NMAC Generator Requirements.

Preliminary Determination for Radioactivity

Based on available information, indicate the amount and type of radiation contamination expected in the waste.

DU and natural uranium are radioactive, so they will be managed as radioactive waste.

Preliminary Radioactivity Status

_____ Material is not radioactive
Describe how waste will be stored

__X___ Material is radioactive
Describe the controlled area, labeling, and protection against inadvertent contamination.

The DU and natural uranium will be stored in a sealed container in a radioactive materials storage area.

CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-004(f) and 15-008(a)	Firing Site E-F and Disposal Area
Specific Waste Type: PPE and waste handling equipment		

Waste Description

Description of Waste Type, Contaminants, Volume Estimate, and Waste Packaging:

Waste Type Description: PPE and waste handling equipment.
Potential Regulatory Status: Visibly contaminated items will be initially considered hazardous or mixed waste depending on the radiological field screening results. Visibly uncontaminated items will be considered non-hazardous or radioactive waste depending on the radiological field screening results.
Volume Estimate: The volume generated will be less than one 55-gal. drum
Waste Packaging: The PPE/waste handling equipment will be placed in sealed plastic bags labeled with the PRS number and then placed inside 55-gal drums. Visibly contaminated and visibly uncontaminated items will be placed in separate drums.

Characterization Strategy

Description of Strategy:

The PPE/waste handling equipment will be decontaminated prior to disposal. After decontamination, the PPE/waste handling equipment will be field screened for gross alpha, gross beta, and gross gamma radiation in accordance with the procedures contained in LANL-ER-SOP-10.07, "Field Monitoring for Surface and Volume Radioactivity Levels." Gross alpha will be screened using an alpha probe, gross beta will be screened using a beta/gamma probe, and gross gamma will be screened using two Ludlum Model 2221 Scaler/Ratemeter single channel analyzers, one with an Eberline SPA-3 scintillation probe which is equivalent to a micro-R-meter, and one with a Ludlum Model 44-9 pancake geiger-mueller detector.

The items will be inspected to determine if there is any visible contamination. If the items are not visibly contaminated and are nonradioactive, they will be placed in plastic bags, segregated by PRS, and managed as non-hazardous, non-radioactive waste. The waste will be stored onsite until the Waste Profile Form is approved.

If the PPE/waste handling equipment is not decontaminated or if decontamination is not effective, the contaminated items will be placed in separate plastic bags labeled with the PRS number and placed in a 55-gal. drum. If the contaminated items are radioactive based on field screening, then they will initially be managed as RCRA mixed waste. If the contaminated items are not radioactive based on field screening, then they will initially be managed as RCRA hazardous waste. The final RCRA status of the contaminated items will be based on the analytical results of a grab sample of the liquid decontamination waste generated at this PRS. The final radioactivity status of the contaminated items will be based on the radiological field screening results and the analytical results of a grab sample of the liquid decontamination waste generated at this PRS. The PPE/waste handling equipment will be assumed to have a similar level of contamination as that contained in the grab liquid sample.

Waste Sampling*: (If sampling will be used, indicate how many grab or composite samples will be collected per container or volume of waste and whether the waste is considered homogeneous or heterogeneous.)

The PPE/waste handling equipment will not be directly sampled, but will be characterized as described above.

- Grab sampling is appropriate for wastes that are fairly homogeneous, such as liquid wastes.
- Composite sampling is appropriate for wastes that are heterogeneous, such as soil, sediment, and debris. A composite sample should consist of no more than 10 subsamples.
- A sample of homogeneous or heterogeneous waste collected for VOC analysis should consist of a grab sample rather than a composite sample.

CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-004(f) and 15-008(a)	Firing Site E-F and Disposal Area

Specific Waste Type: PPE and waste handling equipment

Analytical Strategy:

Analyte Category	Analytical Method	May be Present (yes, no, unknown)	Direct Sampling of Containerized Waste	Acceptable Knowledge Existing Information	Acceptable Knowledge Data from Proposed Site Characterization
Volatile Organic Constituents		No		X	
Semi-Volatile Constituents		Unk		X	
Organic Pesticides		No		X	
Organic Herbicides		No		X	
Pesticides & PCBs		No		X	
PCBs		No		X	

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-004(f) and 15-008(a)	Firing Site E-F and Disposal Area
Specific Waste Type: PPE and waste handling equipment		

Analytical Strategy (Continued)

Analyte Category	Analytical Method	May be Present (yes, no, unknown)	Direct Sampling of Containerized Waste	Acceptable Knowledge Existing Information	Acceptable Knowledge Data from Proposed Site Characterization
Total Metals		Yes		X	
Total Cyanide		No		X	
Other Inorganic Constituents (specify)		No		X	
High Explosive Constituents		No		X	
Asbestos		No		X	
TPH		No		X	
TCLP Metals		Unk		X	
TCLP Organics		No		X	
TCLP Pesticides and herbicides		No		X	
Gross Alpha	Field Screen	Yes	X		
Gross Beta	"	Yes	X		
Gross Gamma	"	Yes	X		
Tritium[2]		No		X	
Gamma Spectroscopy		Yes		X	
Isotopic Plutonium		No		X	
Total Plutonium		No		X	
Isotopic Uranium		Yes		X	
Total Uranium		Yes		X	
Strontium-90		No		X	
Americium-241		No		X	

2 If tritium is not expected to be in the waste and the waste will not be sampled for tritium, attach a tritium statement signed by the FPL stating that based on a review of the available information and professional judgment, it is not necessary to sample for tritium at this site because there is no potential for the waste to contain added tritium due to DOE operations.

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-004(f) and 15-008(a)	Firing Site E-F and Disposal Area

Specific Waste Type: PPE and waste handling equipment

Preliminary RCRA Determination

Based on available information, indicate the waste and whether it could potentially be any of the wastes as defined in 40 CFR, Part 261. List the F-, D-, K-, P-, or U-category and number.

Visibly contaminated PPE and waste-handling equipment will be initially classified as RCRA hazardous or mixed waste depending on the field screening results for radioactivity. A final RCRA determination for the visibly contaminated items will be made after the analytical results of the decontamination liquid are evaluated.
Visibly uncontaminated PPE and waste handling equipment will be considered either non-hazardous or radioactive depending on the field screening results for radioactivity.

Preliminary RCRA Status

__X__ Non-RCRA: (No 90-Day Storage Requirement)
Describe how waste will be stored/handled:

Visibly uncontaminated and nonradioactive items will be segregated and managed as non-RCRA waste. The waste will be stored onsite in a sealed container.

__X__ RCRA: (90-Day Storage Requirement)
Waste will be stored/handled in accordance with 20 NMAC Generator Requirements.

Visibly contaminated items that are not radioactive will be initially managed as RCRA hazardous waste. Visibly contaminated items that are radioactive will be initially managed as RCRA mixed waste. The RCRA waste will be stored in a less than 90-day-storage area. A final RCRA determination will be based on the evaluation of the results of the decontamination liquid sample.

Preliminary Determination for Radioactivity

Based on available information, indicate the amount and type of radiation contamination expected in the waste.

Decontaminated PPE and waste handling equipment are not expected to be radioactive. However, field screening for radioactivity will be performed because DU and natural uranium are present at this PRS. The results of the field screening and those of the liquid grab sample will be used in making a final determination on radioactive status of these wastes.

Preliminary Radioactivity Status

___X__ Material is not radioactive
Describe how waste will be stored.

Visibly uncontaminated items that are nonradioactive will be managed as non-RCRA (see above).

___X__ Material is radioactive
Describe the controlled area, labeling, and protection against inadvertent contamination.

Visibly contaminated items that are radioactive will be stored in a less-than-90-day storage area for mixed waste that is also managed as a radioactive materials storage area.
Visibly uncontaminated items that are radioactive will be stored in a sealed container in a radioactive materials storage area.

CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-004(f) and 15-008(a)	Firing Site E-F and Disposal Area
Specific Waste Type: Decontamination liquids		

Waste Description

Description of Waste Type, Contaminants, Volume Estimate, and Waste Packaging:

Waste Type Description: Decontamination liquids consist of Liquinox® detergent, tap water and distilled water.
Potential Regulatory Status: RCRA mixed waste.
Volume Estimate: Less than one 55-gal. drum.
Waste Packaging: The liquid will be placed inside a 55-gal. drum.

Characterization Strategy

Description of Strategy:

The decontamination liquids will be characterized for RCRA based on the results of an analysis of a grab liquid sample. The decontamination liquids from this PRS will be segregated, stored in a separate drum that is labeled with the PRS number.

Waste Sampling*: (If sampling will be used, indicate how many grab or composite samples will be collected per container or volume of waste and whether the waste is considered homogeneous or heterogeneous.)

One grab sample of the decontamination liquids will be analyzed for total metals, VOCs, SVOCs, HE, gamma spectroscopy, and isotopic uranium. The sample will be analyzed for VOCs for disposal purposes, even though site history does not indicate that VOCs were used at this PRS. A grab sample was selected because the waste is expected to be homogeneous. One sample per waste stream was considered sufficient because of the small volume (less than 55 gallons).

- Grab sampling is appropriate for wastes that are fairly homogeneous, such as liquid wastes.
- Composite sampling is appropriate for wastes that are heterogeneous, such as soil, sediment, and debris. A composite sample should consist of no more than 10 subsamples.
- A sample of homogeneous or heterogeneous waste collected for VOC analysis should consist of a grab sample rather than a composite sample.

Analytical Strategy:

Analyte Category	Analytical Method	May be Present (yes, no, unknown)	Direct Sampling of Containerized Waste	Acceptable Knowledge Existing Information	Acceptable Knowledge Data from Proposed Site Characterization
Volatile Organic Constituents	SW 846 8260	No	X		
Semi-Volatile Constituents	SW 846 8270	Unk	X		
Organic Pesticides		No		X	
Organic Herbicides		No		X	
Pesticides & PCBs		No		X	
PCBs		No		X	

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-004(f) and 15-008(a)	Firing Site E-F and Disposal Area
Specific Waste Type: Decontamination liquids		

Analytical Strategy (Continued)

Analyte Category	Analytical Method	May be Present (yes, no, unknown)	Direct Sampling of Containerized Waste	Acceptable Knowledge Existing Information	Acceptable Knowledge Data from Proposed Site Characterization
Total Metals	SW 846 6010, 7470	Yes	X		
Total Cyanide		No		X	
Other Inorganic Constituents (specify)		No		X	
High Explosive Constituents	SW 846 8330	Unk	X		
Asbestos		No		X	
TPH		No		X	
TCLP Metals		Yes		X	
TCLP Organics		No		X	
TCLP Pesticides and herbicides		No		X	
Gross Alpha		Yes		X	
Gross Beta		Yes		X	
Gross Gamma		Yes		X	
Tritium[3]		No		X	
Gamma Spectroscopy	HASL 300	Yes	X		
Isotopic Plutonium		No		X	
Total Plutonium		No		X	
Isotopic Uranium	HASL 300	Yes	X		
Total Uranium		Yes		X	
Strontium-90		No		X	
Americium-241		No		X	

[3] If tritium is not expected to be in the waste and the waste will not be sampled for tritium, attach a tritium statement signed by the FPL stating that based on a review of the available information and professional judgment, it is not necessary to sample for tritium at this site because there is no potential for the waste to contain added tritium due to DOE operations.

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-004(f) and 15-008(c)	Firing Site E-F and Disposal Area

Specific Waste Type: Decontamination liquids

Preliminary RCRA Determination

Based on available information, indicate the waste and whether it could potentially be any of the wastes as defined in 40 CFR, Part 261. List the F-, D-, K-, P-, or U-category and number.

Initially the decontamination liquid waste will be managed as RCRA mixed waste because it may contain lead and radioactivity. A final RCRA determination will be made after the evaluation of the results for a liquid grab sample.

Preliminary RCRA Status

____ Non-RCRA: (No 90-Day Storage Requirement)
Describe how waste will be stored/handled:

__X__ RCRA: (90-Day Storage Requirement)
Waste will be stored/handled in accordance with 20 NMAC Generator Requirements.

The waste will be stored in a less-than-90-day storage area for RCRA mixed waste.

Preliminary Determination for Radioactivity

Based on available information, indicate the amount and type of radiation contamination expected in the waste.

The DU and natural uranium are radioactive and some uranium may be present in the decontamination liquid. A final determination of the radioactive status of the liquid will be made after the liquid sample results are evaluated.

Preliminary Radioactivity Status

_____ Material is not radioactive
Describe how waste will be stored

___X__ Material is radioactive
Describe the controlled area. labeling, and protection against inadvertent contamination.

The less-than-90 day storage area for mixed waste will be managed as a radioactive materials storage area.

CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1088/FU2	15-004(f) and 15-008(a)	Firing Site E-F and Disposal Area
Wastetypes or Wastestreams: Pieces of uranium, PPE and waste handling equipment, and decontamination liquid		

The Field Unit certifies that only depleted uranium will be picked up at PRSs 15-004(f) and 15-008(a).

Signatures:

Field Team Leader Tracy L McFa

Field Team Waste Management Coordinator Jeff Bingham

Waste Management Representative Mary Jane Wind

9/4/96

Interim Action Plan for

Removal of Visible Lead Shot Near Potential Release Site at TA-15

15-007(c), Shaft

Field Unit 2

Environmental Restoration Project

April 1997

A Department of Energy
Environmental Cleanup Program

LANL
2 / 1086 / 15

Los Alamos
NATIONAL LABORATORY

LA-UR-97-XXXX

[redacted]

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INTERIM ACTION PLAN FOR REMOVAL OF VISIBLE LEAD SHOT NEAR POTENTIAL RELEASE SITE 15-007(c)

1.0 Objectives

Lead shot is visible on a concrete pad surrounding the shaft cover at Potential Release Site (PRS) 15-007(c). The lead shot was noted in the Resource Conservation Recover Act (RCRA) Facility Investigations (RFI) Work Plan (LANL 1993, 1088). PRS 15-007 is listed as a solid waste management unit (SWMU) in the Hazardous Solid Waste Amendments Module of the Los Alamos National Laboratory's (Laboratory's) Part B Permit.

EPA's Notice of Deficiency (NOD) on the RFI Work Plan for Operable Unit 1086 requested information regarding the source of the lead shot. As part of the response to the NOD, the Laboratory stated that the lead would be removed from the site (Jansen and Taylor 1994, ER:94-J351).

All lead shot collected at the site will be accepted for recycling by the Johnson Controls, Inc.

2.0 Site Description

PRS 15-007(c) is an inactive site, covered with a wood cover and surrounded by a concrete pad approximately 20 ft by 20 ft, and the pad is enclosed with a wire fence. The pad is littered with lead shot of diameter about 1/4 in., and lead shot is visible in the surrounding soil. The lead shot presumably, was used for shielding and it was spilled over the site at various unknown times. The lead shot is heavy and doesn't migrate far, even in heavy rainfall. Also, material this dense would have no means of penetrating the soil, but instead it would be uplifted during freeze and thaw cycles, so the majority of the lead shot is expected to be visible at the surface.

The area supports a disturbed grassland community that merges into ponderosa pine forest on the mesa top and canyons. Numerous wildlife species, including deer, elk, small mammals, and migratory birds use the area and may be exposed to lead at the site.

3.0 Explanation of the Proposal

3.1 Description

This site is easily accessible for vehicles by means of an unimproved road from the R-45 site. See Figure 1.

Before remediation actually begins, the appropriate health and safety screening will be conducted, using the site-specific health and safety requirements, and all site-specific health and safety requirements will be followed during the activity (Annex 1).

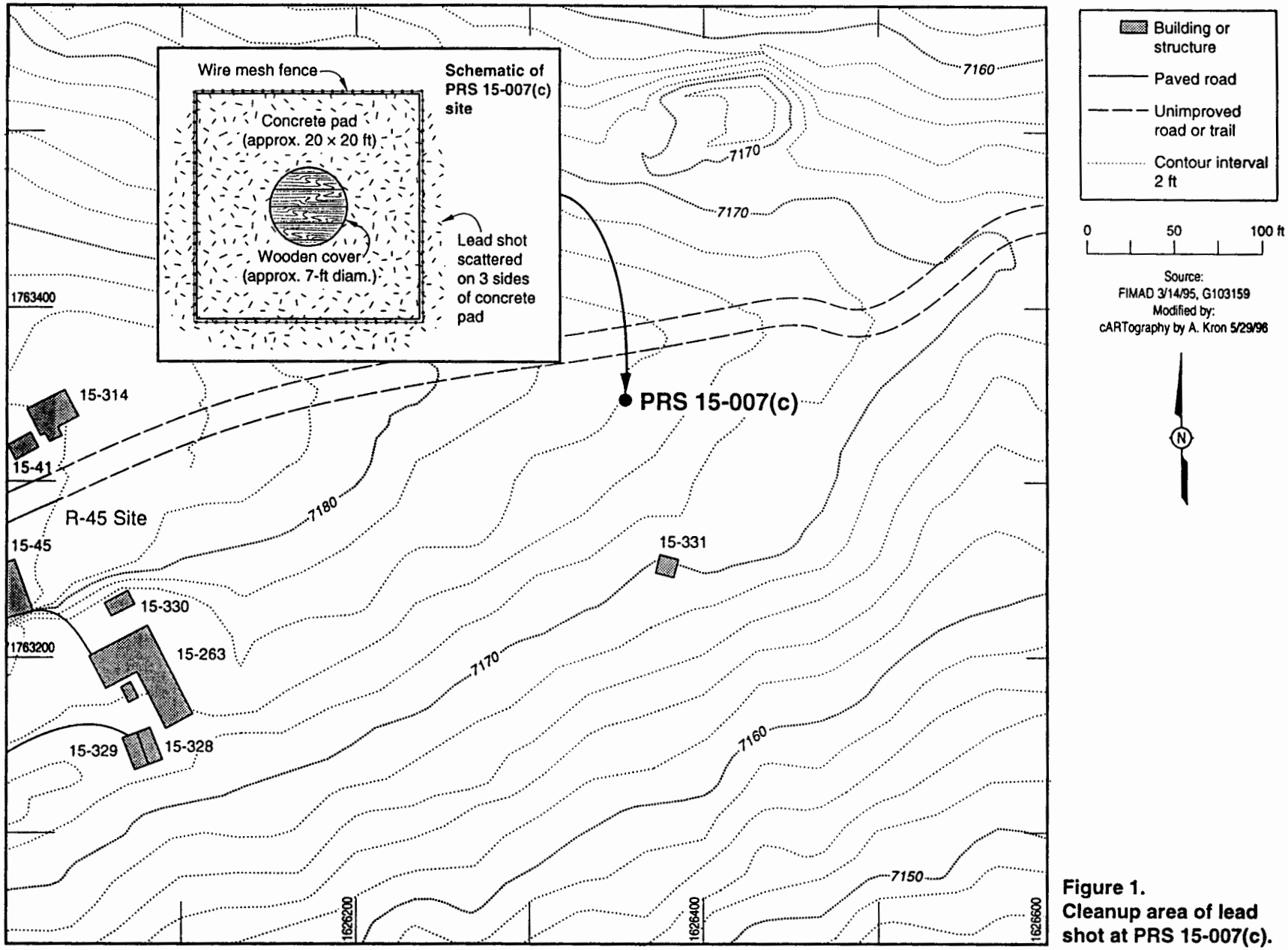

Figure 1.
Cleanup area of lead shot at PRS 15-007(c).

Figure 1. Cleanup area of lead shot at PRS 15-007(c)

This corrective action consists of removing the visible lead shot with the objective removing as much visible lead shot as possible. Lead shot on the pad can be either managed by hand removal or by sweeping the lead together for removal by shovel or by hand. Lead shot in the soil can be removed by hand. The soil 10 to 20 ft from the concrete pad will be visually surveyed for the presence of the lead shot, and surface areas that have dense populations of lead shot may be disturbed or turned over to a depth of 2 to 4 in. using small hand tools or sampling spoons. The objective is to remove as much lead shot as possible without collecting soil, rocks, or vegetation.

The radiation technician will screen the lead using two Ludlum Model 2221 Scalar/Rate Meter single-channel analyzers, one with an Eberline SPA-3 scintillation probe and one with a Ludlum Model 44-9 pancake geiger-mueller detector, both taking readings of the lead shot. If the lead shot indicates contamination with radionuclides, the effort will be stopped immediately until a decision is made regarding the generation of mixed waste.

Water sprayers will be used for general dust suppression, if necessary, while the field team is on site, but application of water will be limited and will not result in runoff.

During field activities, field analyses will be conducted for the presence of lead in the soil. Soil surrounding localized areas of visible lead will be collected for sample analyses, which will be field conducted using either laser induced breakdown spectroscopy or x-ray fluorescence. Results of these analyses may provide basis for possible further action.

The recovered lead shot, estimated to have a total volume of less than 30 gal., will be transferred to Johnson Controls, Incorporated, for recycling.

After the activity is completed, the tools, equipment, and personal protective equipment (PPE) will be decontaminated. The decontamination fluid will be stored in bung-top drums of appropriate size and will be sampled for characterization. If PPE that is being discarded shows evidence of contamination that cannot be decontaminated, the uncleanable portions will be cut out and stored separately in a drum labeled, Hazardous Waste. Discarded equipment that cannot be effectively decontaminated will be stored together with the contaminated PPE.

4.0 Monitoring and Confirmatory Activities

This section is not applicable.

5.0 Maintenance and Inspection

This section is not applicable.

6.0 Waste Management

Wastes expected to be generated during the interim action at this PRS are identified in Table 1.

TABLE 1
EXPECTED WASTE TYPES AND VOLUMES

Item	Waste Type	Anticipated Volume and Storage Container
Decontamination water	Sanitary	<1 30 gal. drum
PPE and uncontaminated equipment	Sanitary	< 1-55 gal. drum

Waste Characterization Strategy Forms (WCSF) have been submitted to Chemical and Mixed Waste Science, CST-5, and Environmental Services (ESH-19) for review. The requirements for waste characterization strategy for the waste type described in the WCSF are described below.

All PPE and sampling equipment will be screened for alpha, beta, and gamma radioactivity using according to LANL-ER-SOP-10.07 (LANL 0875), using hand-held instruments. PPE or sampling equipment that is not visibly contaminated will be placed into plastic bags and labeled appropriately. PPE or sampling equipment that is visibly contaminated will be segregated, labeled, and managed as hazardous waste, which will be characterized based on the sampling results for the decontamination liquid, below.

Decontamination liquids, consisting of water and Liquinox® will have one grab sample analyzed for toxic characteristic (TC) metals, HE, semivolatile organic compounds, gamma scan and total uranium. The drum will be labeled, Potentially Hazardous Waste, and date of sampling.

6.1 Method of Management and Disposal

Waste Profile Forms must be completed for all waste that is being offered for disposal.

Decontamination liquid will be held in a labeled drum. If sample results indicate that the liquid contains TC metals or other Resource Conservation Recovery Act (RCRA) constituents above regulatory levels, the drum of liquid will be transferred to CST-5 for final disposal. Uncontaminated liquid will be disposed of at the site.

All drums containing solid waste designated as potentially hazardous material will be stored onsite in an approved <90 day storage location until the liquid sample results are evaluated and a RCRA determination is made. Hazardous waste will be transferred to CST-5. Uncontaminated solid waste will be transferred to the County Sanitary Landfill for disposal.

7.0 Schedule

This activity will take one week to complete. Tentative start date is October 1999.

8.0 References

Jansen, J. and T. Taylor, August 24, 1994. "Notice of Deficiency Response for Operable Unit 1086 Resource Conservation and Recovery Act Facility Investigation Work Plan," Los Alamos National Laboratory Environmental Restoration Letter ER:94-J351. Los Alamos, New Mexico. (Jansen and Taylor 1994, ER:94-J351)

LANL (Los Alamos National Laboratory), July 1993. "RFI Work Plan for Operable Unit 1086,) Los Alamos National Laboratory Report LA-UR-92-3968, Los Alamos, New Mexico. (LANL 1993, 1088)

LANL (Los Alamos National Laboratory), "Los Alamos National Laboratory Environmental Restoration Program Standard Operating Procedures," Los Alamos National Laboratory, Los Alamos, New Mexico. (LANL 0875)

Annexes

Annex 1, Site-Specific Health and Safety Plan

Annex 2, Interim Action Approval Form

Annex 3, Characterization Strategy Form

ANNEX 1

SITE-SPECIFIC HEALTH AND SAFETY PLAN

The Site-Specific Health and Safety Plan for all Technical Areas (TAs) -12, -14, and -15 for all field activities for FY 1996 was approved on May 24, 1996.

ANNEX 2

INTERIM ACTION PLAN
APPROVAL/DISAPPROVAL FORM

PRS(s) 15-007(c)

The undersigned have reviewed the Interim Action Plan and believe that an interim action is appropriate.

FPL _____ Date 4/8/97

FPC _____ Date _____

.....

I, Theodore J. Taylor, DOE-LAAO, **APPROVE** _____, **DISAPPROVE** _____ the accompanying Interim Action Plan for PRS(s) 15-007(c), TA-15.

The following reasons reflect the decision for disapproval:

_____

_____

_____

_____

_____

_____

_____

Signed:_____ Date:_____

ANNEX 3

CHARACTERIZATION STRATEGY FORM

CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-007(c)	Lead Shot Area
All Waste Types or Waste Streams: Lead shot (to be recycled), PPE and waste handling equipment, and decontamination liquid		

Completed By: J. W. Heyser	Date: September 3, 1996
FPL: T. E. Gene Gould	WMC: Bob Catherwood, ESA-EPE
Type of Activity (site investigation, EC, etc.): Interim Action	

Description of the Activity (e.g., drilling, surface sampling, excavation and recontouring, soil washing, etc.)

This Interim Action (IA) consists of picking up lead shot that is visible on the ground surface. No soil will be removed. The lead shot will be picked up from the ground by hand. The lead will be characterized for radioactivity using field instruments and the Rad Van in accordance with an SOP that addresses how the DOE free-release criteria and ALARA concerns will be met. Nonradioactive lead will be sent to Johnson Controls, Inc. (JCI) for recycling. If the lead shot is contaminated with radioactivity, this IA will be immediately stopped until a decision is made to generate mixed waste. The potential for generating mixed waste is low because based on available information, radioactive materials were not used or tested at this PRS. HE is not a potential contaminant in surface soil at this site.

Acceptable Knowledge

Site Description, Site History, and Historical Waste Generating Processes or Activities: (Include dates for site history):

This PRS consists of a 6-ft. diameter by 130-ft-deep vertical shaft that was dug into the tuff approximately 300 ft. east of building TA-15-263 at Firing Site R-45. The surface of this PRS is littered with lead shot of 1/4 in. diameter. The lead shot is thought to have been used for sheilding and was spilled over the site at various times.

Previous Investigation Analytical Results: (Attach copy of analytical methods and results above background levels)

No Phase I data were collected.

CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-007(c)	Lead Shot Area
Specific Waste Type: Lead shot (to be recycled)		

Waste Description

Description of Waste Type, Contaminants, Volume Estimate, and Waste Packaging:

Waste Type Description: No solid waste is expected because the lead shot will be recycled.
Potential Regulatory Status: Lead waste is RCRA, but recycled lead is not waste.
Volume Estimate: No waste volume is expected.
Waste packaging: Not applicable

Characterization Strategy

Description of Strategy:

Lead shot will be picked up from the ground by hand. Excess soil will be removed from the lead shot by brushing or rinsing (if dry removal methods are not effective). Even though the lead is not expected to be radioactive, the lead must be screened for radioactivity before it can be recycled. The lead will be characterized for radioactivity in accordance with an SOP that describes how the DOE free-release criteria and ALARA concerns will be met. The lead shot and swipes of the lead shot will be field screened for radioactivity gross alpha, beta and gamma radioactivity in accordance with the procedures contained in LANL-ER-SOP-10.07, "Field Monitoring for Surface and Volume Radioactivity Levels." Gross alpha will be screened using an alpha probe, gross beta will be screened using a beta/gamma probe, and gross gamma will be screened using two Ludlum Model 2221 Scaler/Ratemeter single channel analyzers, one with an Eberline SPA-3 scintillation probe which is equivalent to a micro-R-meter, and one with a Ludlum Model 44-9 pancake geiger-mueller detector. In addition, representative samples of the lead shot will be direct counted in the Rad Van. Lead shot that is not contaminated with radioactivity will be sent to JCI for recycling. If lead contaminated with radioactivity is found, work will stop until a decision is made to generate mixed waste.

Waste Sampling*: (If sampling will be used, indicate how many grab or composite samples will be collected per container or volume of waste and whether the waste is considered homogeneous or heterogeneous.)
No analytical samples of the lead will be taken.

- Grab sampling is appropriate for wastes that are fairly homogeneous, such as liquid wastes.
- Composite sampling is appropriate for wastes that are heterogeneous, such as soil, sediment, and debris. A composite sample should consist of no more than 10 subsamples.
- A sample of homogeneous or heterogeneous waste collected for VOC analysis should consist of a grab sample rather than a composite sample.

Analytical Strategy:

Analyte Category	Analytical Method	May be Present (yes, no, unknown)	Direct Sampling of Containerized Waste	Acceptable Knowledge Existing Information	Acceptable Knowledge Data from Proposed Site Character.
Volatile Organic Constituents		No		X	
Semi-Volatile Constituents		No		X	
Organic Pesticides		No		X	
Organic Herbicides		No		X	
Pesticides & PCBs		No		X	
PCBs		No		X	

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-007(c)	Lead Shot Area
Specific Waste Type: Lead shot (to be recycled)		

Analytical Strategy (Continued)

Analyte Category	Analytical Method	May be Present (yes, no, unknown)	Direct Sampling of Containerized Waste	Acceptable Knowledge Existing Information	Acceptable Knowledge Data from Proposed Site Characterization
Total Metals		Yes		X	
Total Cyanide		No		X	
Other Inorganic Constituents (specify)		No		X	
High Explosives		No		X	
Asbestos		No		X	
TPH		No		X	
TCLP Metals		Yes		X	
TCLP Organics		No		X	
TCLP Pest/herb.		No		X	
Gross Alpha	Field Screen	No	X		
Gross Beta	"	No	X		
Gross Gamma	"	No	X		
Tritium[1]		No		X	
Gamma Spec.		No		X	
Isotopic Pu/Total Pu		No		X	
Isotopic Uranium		No		X	
Total Uranium		No		X	
Sr-90/Am-241		No		X	

[1] If tritium is not expected to be in the waste and the waste will not be sampled for tritium, attach a tritium statement signed by the FPL stating that based on a review of the available information and professional judgment, it is not necessary to sample for tritium at this site because there is no potential for the waste to contain added tritium due to DOE operations.

CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-007(c)	Lead Shot Area
Specific Waste Type: Lead shot (to be recycled)		

Preliminary RCRA Determination

Based on available information, indicate the waste and whether it could potentially be any of the wastes as defined in 40 CFR, Part 261. List the F-, D-, K-, P-, or U-category and number.

Nonradioactive lead shot will be recycled and will be managed as a non-RCRA waste.
It is very unlikely that the lead shot will be radioactive. If the lead shot is contaminated with radioactivity, the IA will be stopped until a decision is made to generate mixed waste.

Preliminary RCRA Status

__X__ Non-RCRA: (No 90-Day Storage Requirement)
Describe how waste will be stored/handled:

Uncontaminated lead is not a waste and will be recycled. It will be stored on-site in a closed 55-gal drum until it is sent to JCI for recycling.

___ RCRA: (90-Day Storage Requirement)
Waste will be stored/handled in accordance with 20 NMAC Generator Requirements.

Preliminary Determination for Radioactivity

Based on available information, indicate the amount and type of radiation contamination expected in the waste.

Radioactive materials were not used or tested at this PRS, so the spilled lead shot is not expected to be radioactive.

Preliminary Radioactivity Status

__X___ Material is not radioactive
Describe how waste will be stored.

____ Material is radioactive
Describe the controlled area, labeling, and protection against inadvertent contamination.

CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-007(c)	Lead Shot Area
Specific Waste Type: PPE and waste handling equipment		

Waste Description

Description of Waste Type, Contaminants, Volume Estimate, and Waste Packaging:

Waste Type Description: PPE and waste handling equipment.

Potential Regulatory Status: Visibly contaminated items will be initially considered RCRA or mixed waste depending on the radiological field screening results. Visibly uncontaminated items will be considered non-hazardous or radioactive waste depending on the radiological field screening results.

Volume Estimate: The volume generated will be less than one 55-gal. drum

Waste Packaging: The PPE/waste handling equipment will be placed in sealed plastic bags labeled with the PRS number and then placed inside 55-gal drums. Visibly contaminated and visibly uncontaminated items will be placed in separate drums.

Characterization Strategy

Description of Strategy: If possible, the PPE/waste handling equipment will be decontaminated prior to disposal. After decontamination, the PPE/waste handling equipment will be field screened for radioactivity even though radioactive materials were not used or tested at this PRS. The items will be field screened for gross alpha, gross beta, and gross gamma radiation in accordance with the procedures contained in LANL-ER-SOP-10.07, "Field Monitoring for Surface and Volume Radioactivity Levels." Gross alpha will be screened using an alpha probe, gross beta will be screened using a beta/gamma probe, and gross gamma will be screened using two Ludlum Model 2221 Scaler/Ratemeter single channel analyzers, one with an Eberline SPA-3 scintillation probe which is equivalent to a micro-R-meter, and one with a Ludlum Model 44-9 pancake geiger-mueller detector.

The items will be inspected to determine if there is any visible contamination. If the items are not visibly contaminated and are nonradioactive, they will be placed in plastic bags, segregated by PRS, and managed as non-hazardous, non-radioactive waste. The waste will be stored onsite until the Waste Profile Form is approved.

If the PPE/waste handling equipment is not decontaminated or if decontamination is not effective, the contaminated items will be placed in separate plastic bags labeled with the PRS number and placed in a 55-gal. drum. If the contaminated items are radioactive based on field screening, then they will initially be managed as RCRA mixed waste. If the contaminated items are not radioactive based on field screening, then they will initially be managed as RCRA hazardous waste. The final RCRA status of the contaminated items will be based on the analytical results of a grab sample of the liquid decontamination waste generated at this PRS. The final radioactivity status of the contaminated items will be based on the radiological field screening results and the analytical results of a grab sample of the liquid decontamination waste generated at this PRS. The PPE/waste handling equipment will be assumed to have a similar level of contamination as that contained in the grab liquid sample.

Waste Sampling*: (If sampling will be used, indicate how many grab or composite samples will be collected per container or volume of waste and whether the waste is considered homogeneous or heterogeneous.) The PPE/waste handling equipment will not be directly sampled, but will be characterized as described above.

- Grab sampling is appropriate for wastes that are fairly homogeneous, such as liquid wastes.
- Composite sampling is appropriate for wastes that are heterogeneous, such as soil, sediment, and debris. A composite sample should consist of no more than 10 subsamples.
- A sample of homogeneous or heterogeneous waste collected for VOC analysis should consist of a grab sample rather than a composite sample.

CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-007(c)	Lead Shot Area

Specific Waste Type: PPE and waste handling equipment

Analytical Strategy:

Analyte Category	Analytical Method	May be Present (yes, no, unknown)	Direct Sampling of Containerized Waste	Acceptable Knowledge Existing Information	Acceptable Knowledge Data from Proposed Site Characterization
Volatile Organic Const.		No		X	
Semi-Volatile Const.		No		X	
Organic Pesticides		No		X	
Organic Herbicides		No		X	
Pesticides & PCBs		No		X	
PCBs		No		X	

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-007(c)	Lead Shot Area
Specific Waste Type: PPE and waste handling equipment		

Analytical Strategy (Continued)

Analyte Category	Analytical Method	May be Present (yes, no, unknown)	Direct Sampling of Containerized Waste	Acceptable Knowledge Existing Information	Acceptable Knowledge Data from Proposed Site Character.
Total Metals		Yes		X	
Total Cyanide		No		X	
Other Inorganic Constituents (specify)		No		X	
High Explosive Constituents		No		X	
Asbestos		No		X	
TPH		No		X	
TCLP Metals		Unk		X	
TCLP Organics		No		X	
TCLP Pest/herb		No		X	
Gross Alpha	Field Screen	No	X		
Gross Beta	"	No	X		
Gross Gamma	"	No	X		
Tritium[2]		No		X	
Gamma Spectroscopy		No		X	
Isotopic Pu/Total Pu		No		X	
Isotopic Uranium		No		X	
Total Uranium		No		X	
Sr-90/Am-241		No		X	

[2] If tritium is not expected to be in the waste and the waste will not be sampled for tritium, attach a tritium statement signed by the FPL stating that based on a review of the available information and professional judgment, it is not necessary to sample for tritium at this site because there is no potential for the waste to contain added tritium due to DOE operations.

CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-007(c)	Lead Shot Area

Specific Waste Type: PPE and waste handling equipment

Preliminary RCRA Determination

Based on available information, indicate the waste and whether it could potentially be any of the wastes as defined in 40 CFR, Part 261. List the F-, D-, K-, P-, or U-category and number.

Visibly contaminated PPE and waste handling equipment will be initially classified as RCRA or mixed waste due to the presence of lead at the site and depending on the radioactive field screening results. Visibly uncontaminated PPE and waste handling equipment will be considered either non-hazardous or radioactive depending on the radioactive screening results. A final RCRA determination will be made after the analytical results for the sample of liquid decon. waste are evaluated.

Preliminary RCRA Status

__X__ Non-RCRA: (No 90-Day Storage Requirement)
Describe how waste will be stored/handled:

Visibly uncontaminated items will be segregated and managed as non-RCRA waste.

__X__ RCRA: (90-Day Storage Requirement)
Waste will be stored/handled in accordance with 20 NMAC Generator Requirements.

Visibly contaminated items will be segregated and managed as RCRA waste, and stored in a less-than-90 day storage area. A final RCRA determination will be made after the liquid decon. waste results are evaluated.

Preliminary Determination for Radioactivity

Based on available information, indicate the amount and type of radiation contamination expected in the waste.

The PPE and waste handling equipment are not expected to be radioactive based on the history of this site. However, field screening for radioactivity will be performed. The results of the field screening and those of the liquid grab sample will be used in making a final determination on radioactive status of these wastes.

Preliminary Radioactivity Status

__X__ Material is not radioactive
Describe how waste will be stored.

_____ Material is radioactive
Describe the controlled area, labeling, and protection against inadvertent contamination.

If the analysis of the liquid sample shows that it is radioactive, then the PPE will be stored in a storage area for radioactive materials and the waste container will be labeled as radioactive.

CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1085/FU2	15-007(c)	Lead Shot Area
Specific Waste Type: Decontamination liquids		

Waste Description

Description of Waste Type, Contaminants, Volume Estimate, and Waste Packaging:

Waste Type Description: Decontamination liquids consist of Liquinox® detergent, tap water and distilled water.
Potential Regulatory Status: RCRA hazardous waste.
Volume Estimate: A total volume of less than 30 gallons.
Waste Packaging: The liquid will be placed inside a 55-gal. drum and kept in a less-then-90-day storage area.

Characterization Strategy

Description of Strategy:

The decontamination liquids will be characterized for RCRA based on the results of an analysis of a grab liquid sample. The decontamination liquids from this PRS will be segregated, placed in a separate drum and labeled with the PRS number.

Waste Sampling*: (If sampling will be used, indicate how many grab or composite samples will be collected per container or volume of waste and whether the waste is considered homogeneous or heterogeneous.)

One grab sample of the decontamination liquids will be analyzed for total metals, VOCs, SVOCs, gamma spectroscopy, and isotopic uranium. The sample will be analyzed for VOCs, SVOCs, gamma spectroscopy, and isotopic uranium for disposal purposes even though the site history does not indicate the use of these constituents. A grab sample was selected because the waste is expected to be homogeneous. One sample per waste stream was considered sufficient because of the small volume (less than 30 gallons).

- Grab sampling is appropriate for wastes that are fairly homogeneous, such as liquid wastes.
- Composite sampling is appropriate for wastes that are heterogeneous, such as soil, sediment, and debris. A composite sample should consist of no more than 10 subsamples.
- A sample of homogeneous or heterogeneous waste collected for VOC analysis should consist of a grab sample rather than a composite sample.

Analytical Strategy:

Analyte Category	Analytical Method	May be Present (yes, no, unknown)	Direct Sampling of Containerized Waste	Acceptable Knowledge Existing Information	Acceptable Knowledge Data from Proposed Site Character.
Volatile Organic Constit	SW 846 8260	No	X		
Semi-Volatile Const.	SW 846 8270	No	X		
Organic Pesticides		No		X	
Organic Herbicides		No		X	
Pesticides & PCBs		No		X	
PCBs		No		X	

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-007(c)	Lead Shot Area
Specific Waste Type: Decontamination liquid		

Analytical Strategy (Continued)

Analyte Category	Analytical Method	May be Present (yes, no, unknown)	Direct Sampling of Containerized Waste	Acceptable Knowledge Existing Information	Acceptable Knowledge Data from Proposed Site Character.
Total Metals	SW 846, 6010, 7470	Yes	X		
Total Cyanide		No		X	
Other Inorganic Constituents (specify)		No		X	
High Explosive Constit.		No		X	
Asbestos		No		X	
TPH		No		X	
TCLP Metals		Unk		X	
TCLP Organics		No		X	
TCLP Pest/ herbicides		No		X	
Gross Alpha		No		X	
Gross Beta		No		X	
Gross Gamma		No		X	
Tritium[3]		No		X	
Gamma Spectroscopy	HASL 300	No	X		
Isotopic Pu/Total Pu		No		X	
Isotopic Uranium	HASL 300	No	X		
Total Uranium		No		X	
Sr-90/Am-241		No		X	

[3] If tritium is not expected to be in the waste and the waste will not be sampled for tritium, attach a tritium statement signed by the FPL stating that based on a review of the available information and professional judgment, it is not necessary to sample for tritium at this site because there is no potential for the waste to contain added tritium due to DOE operations.

CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-007(c)	Lead Shot Area
Specific Waste Type: Decontamination liquid		

Preliminary RCRA Determination

Based on available information, indicate the waste and whether it could potentially be any of the wastes as defined in 40 CFR, Part 261. List the F-, D-, K-, P-, or U-category and number.

Initially the decontamination liquid waste will be managed as RCRA hazardous waste. A final RCRA determination will be made after the evaluation of the results for a liquid grab sample.

Preliminary RCRA Status

____ Non-RCRA: (No 90-Day Storage Requirement)
Describe how waste will be stored/handled:

__X__ RCRA: (90-Day Storage Requirement)
Waste will be stored/handled in accordance with 20 NMAC Generator Requirements.

The decon. liquid will be stored in a less-than-90 day storage area. A final RCRA determination will be made after the analytical results of the liquid sample are evaluated.

Preliminary Determination for Radioactivity

Based on available information, indicate the amount and type of radiation contamination expected in the waste.

This site is not expected to have radioactive contamination based on its past history. A final determination of the radioactive status of the decon. waste will be made after the liquid sample results are evaluated.

Preliminary Radioactivity Status

___X__ Material is not radioactive
Describe how waste will be stored.

_____ Material is radioactive
Describe the controlled area, labeling, and protection against inadvertent contamination.

If the analysis of the liquid sample shows that it is radioactive, then decon. liquid waste will be stored in a storage area for radioactive materials and the waste container will be labeled as radioactive.

CHARACTERIZATION STRATEGY FORM

OU Number/FU	PRS/SWMU Number	Title
1086/FU2	15-007(c)	Lead Shot Area
Waste Types or Waste Streams: Lead shot (to be recycled), PPE and waste handling equipment, and decontamination liquid		

The Field Unit certifies that only lead shot is found at PRS 15-007(c).

Signatures:

Field Team Leader Tracy L McT

Field Team Waste Management Coordinator Jeff Bingham

Waste Management Representative Mary Jane Wind

9/4/96