

LANL 1996
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**INTERIM ACTION PLAN
FOR POTENTIAL RELEASE SITE
15-006(c), FIRING SITE
REMOVAL OF VISIBLE DEPLETED URANIUM
AND LEAD SHOT**

June 4, 1996



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Los Alamos
NATIONAL
LABORATORY
memorandum

Engineering Sciences and Applications
ESA-EPE, Energy and Process Engineering

To/MS: Distribution
From/MS: T. E. Gene Gould, ESA-EPE, G787
Phone/FAX: 7-0402/5-1976
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Date: June 6, 1996

TEG

SUBJECT: INTERNAL REVIEW - INTERIM ACTION PLANS

The IA Plans for PRS's 15-006(c) 15-007(c), 15-004 (f) and 15-008(a) are attached. Please review these documents and return your comments to Tom Fogg, ICF Kaiser, by June 14, 1996. (Comment resolutions forms are attached.)

If you have any questions regarding the technical contents of these reports, please contact Tom Fogg at 661-5279.

TEG/nr

Attachments: (1) IA Plans
(2) Comment resolution forms

Distribution:

Everett Trollinger, LAAO, MS A316 w/ Attachments 1 and 2
Pat Shanley, ESH-19, MS K498 w/ Attachments 1 and 2
Tracy Glatzmaier, EM/ER, MS M992 w/ Attachments 1 and 2
~~EPP, MS M701 w/ Attachment 1~~
ESA-EPE Serial File w/o Attachments

JUN 12 1996

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**INTERIM ACTION PLAN
FOR POTENTIAL RELEASE SITE
15-006(c), FIRING SITE**

**REMOVAL OF VISIBLE DEPLETED URANIUM
AND LEAD SHOT**

June 4, 1996

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**INTERIM ACTION PLAN FOR
POTENTIAL RELEASE SITE
15-006(c), FIRING SITE**

**REMOVAL OF VISIBLE DEPLETED URANIUM
AND LEAD SHOT**

1.0 Rationale and Objective of Interim Action

Chunks of depleted uranium (DU) and lead shot are visible across Potential Release Site (PRS) 15-006(c), Firing Site. The exposed DU poses an environmental hazard to wildlife that might ingest the uranium or lead shot. Additionally, both DU and lead on the site would be subject to weathering and possible dispersion. Elimination of exposed DU and lead would reduce the exposure to wildlife and possible weathering of the DU and lead. Because DU and lead would be removed in the final remedy, removal of the visible DU and lead at the surface is part of the final remedy.

Lead shot would be accepted for recycling by Johnson Controls, Inc. Pieces of high explosives (HE) noted at the site will be flagged for the user group.

The total cost is expected to be \$56,000, which includes preparation, field work, disposal costs, demobilization, and report writing. The Environmental Restoration (ER) Project will save resources, and the Project \$200 by recycling the lead. The onsite work will be completed in one week.

This interim action is not considered an accelerated cleanup; a cleanup 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 ingestion while the plan for the final remedy is being prepared and submitted for approval.

2.0 Site Description and Characterization Data

PRS 15-006(c), is the third most extensively used firing site at Technical Area (TA)-15. The site is located on an open flat area on a narrow mesa jutting over Threemile Canyon (Figure 1). The site was used from 1956 through 1978, and approximately 7000 kg of uranium (largely DU) and other materials were expended during that time. Since PHERMEX and Ector were put into operation, this site has been used only for small experiments. The last experiment was conducted in 1992 (LANL 1993, 1087).

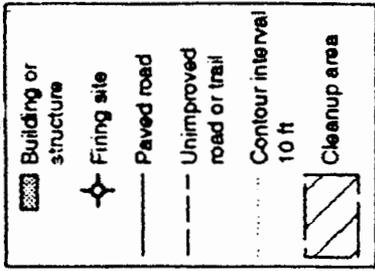
Chunks of uranium and DU are visible across the site. Presence of radionuclides at the site has been confirmed by aerial radiological studies, with the greatest concentration of radionuclides near the center of the firing site (LANL 1993, 1087). Lead shot is visible in a number of localized areas across the site.

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 are exposed to lead and uranium at the site.

3.0 Interim Action

3.1 Description

This interim action consists of visually locating DU and removing identified pieces. A radiation technician will use instruments to assist in locating and verifying that the identified pieces are uranium. Lead shot will be removed by hand or using a screen to prevent the accumulation of soil in the recycle drums separate from the DU. If HE is noted, it will be flagged for removal by the user group. The surface soil will not be disturbed unless larger pieces of uranium are identified under the surface. This PRS is easily accessible by means of a paved road to the interior of the area.



Source
 FIMAD 3/15/95, G100162
 Modified by
 CAR Topography by A. Kron 5/2/96

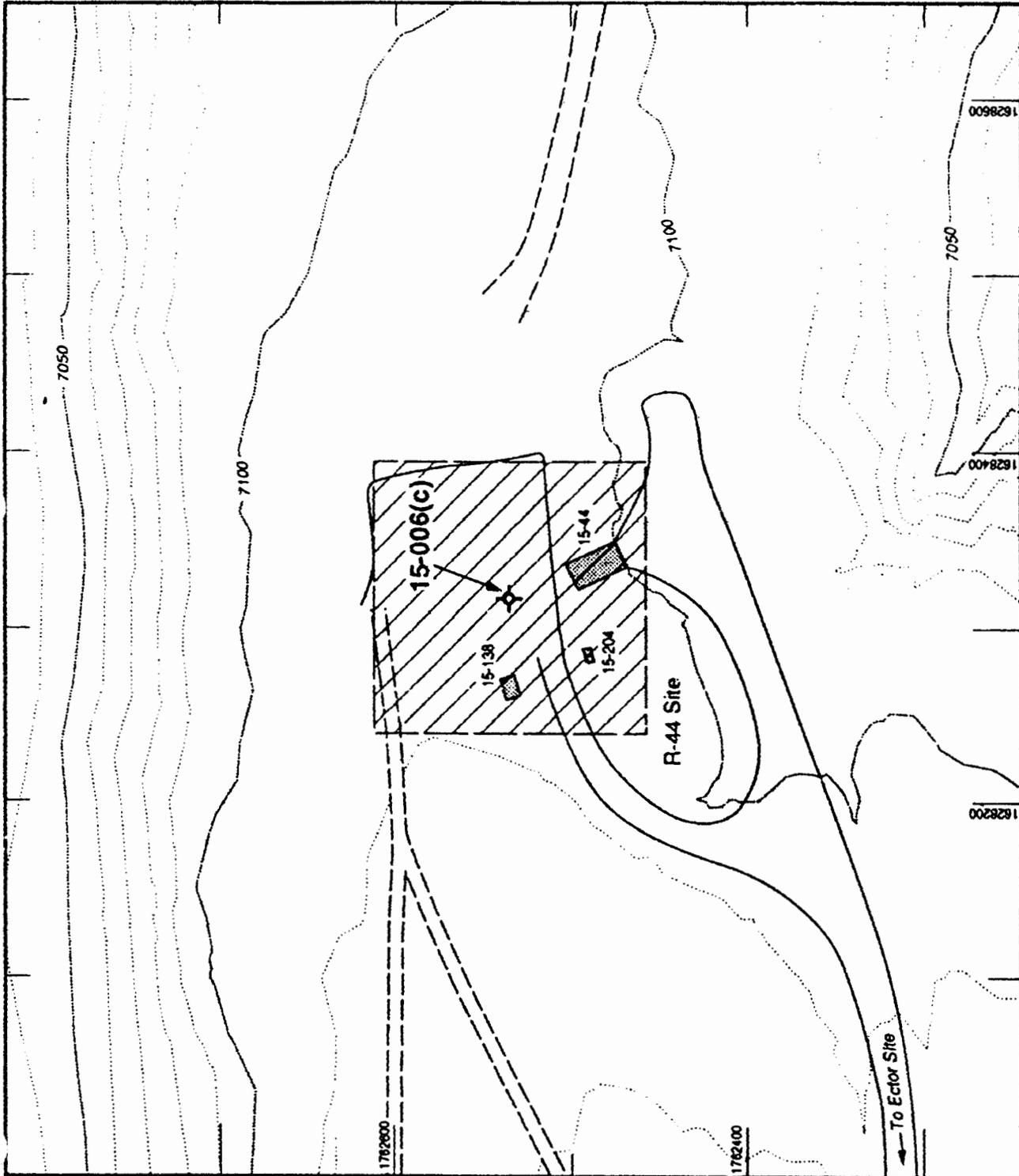


Figure 1.
 Cleanup area for
 interim action at
 PRS 15-006(c).

Before remediation 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 sampling 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 DU and lead shot. The radiation technician can confirm the presence of radioactivity if the team member is unsure if the identified piece of material is DU.

The team will collect pieces of DU and place them into 55-gal drums using hand tools or sampling spoons. Large amounts of soil will not be collected during this process, but small amounts of soil may be attached to the DU that is collected. The drums must be labeled with low-level radioactivity signs, in accordance with the LANL Radiological Control Manual. The volume of waste expected in this sweep is less than 5 55-gal. drums.

Lead shot in the soil can be removed by hand or by using a screen. The objective is to remove as much lead shot as possible. The lead shot will be surveyed for radioactivity using the procedure and instruments described above. If the lead shot appears to be contaminated with radionuclides, the effort will be stopped immediately until a decision is made regarding the generation of mixed waste. If soil is present, it will be removed before placing the lead in the drum. The container of lead shot, estimated to be less than 30 gal., will be transferred to Johnson Controls, Incorporated, for recycling.

After removal of the DU and lead, 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 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 Reducing Risk

The primary pathway of concern for wildlife exposure is ingestion of small pieces of uranium and lead. Removal of visible lead and uranium will reduce the source of small, weathered pieces of uranium that may be ingested by wildlife. Removal of lead shot will eliminate exposure to a documented source of lead, which could cause poisoning in terrestrial wildlife.

Risk to human health is not being addressed in this interim action. However, the removal of obvious contaminants will lower risk to humans as well as wildlife by the prevention of possible deterioration and migration of the DU and the lead.

4.0 Monitoring and Confirmatory Activities

This section is not applicable. Monitoring and confirmatory activities may be a part of the final remedy. The interim action is being conducted to reduce risk to wildlife 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 TYPES AND VOLUMES**

Item	Waste Type	Anticipated Volume
DU	Low-level radioactive	< 2 55-gal. drum
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 has been submitted to Chemical and Mixed Waste Services Group (CST-5) and Environmental Services Group (ESH-19) for review. The waste characterization strategy for the waste type described in the WCSF are briefly described below.

Collected DU will be stored in labeled drums onsite.

PPE and/or sampling equipment that is either visibly contaminated or exhibits radioactivity above the levels described in LANL-ER-SOP-10.07, Field Screening for Surface and Volume Radioactivity Levels (LANL 0875), will be considered low-level radioactive waste and will be characterized based on the sampling results from the decontamination liquid as described below. The remaining PPE and equipment will be considered non-radioactive, using the methods described in LANL-ER-SOP-10.07. 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 TCLP metals, HE, semivolatile organic compounds, gamma scan, 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.

All PPE and equipment must be surveyed for radioactivity following LANL-ER-SOP-10.07 (LANL 0875), using hand-held instruments. Drums of radioactive PPE and equipment will be stored, labeled, and segregated from non-radioactive wastes. These drums will be transferred to CST-14 for final disposal. Drums of PPE and equipment determined to be free of contamination following LANL-ER-SOP-01.06 (LANL 0875), may be taken to the County landfill for disposal.

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, provided that the levels of metals and organic compounds in the liquid meet the acceptance criteria of the wastewater treatment plant. Uncontaminated liquid will be disposed of appropriately.

All drums of potentially contaminated waste, including DU, will be stored onsite, on pallets, in an approved < 90 day storage location, until they are transferred either to CST-14, Solid Radioactive Waste Management or CST-13, Radioactive and Industrial Waste Water.

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.

7.0 Schedule and Cost

This activity will take 1 week to complete. Tentative start date is August 19, 1996.

**TABLE 2
COST ESTIMATE**

Activity	\$ Amount
Plan Development	\$28,000
Mobilization	7,500
Cleanup	7,300
Verification Sampling	0
Waste Disposal	4,000
Field Screening	1,500
Demobilization	1,000
Reporting	6,700
Total Estimated Cost	\$56,000

Recycling the lead has saved the Environmental Restoration Project \$200 in hazardous waste disposal costs.

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, 1087)

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 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 APPROVAL FORM

I, _____, DOE-LAAO **APPROVE** the interim action as proposed in this Interim Action Plan for PRS 15-006(c).

I, _____, DOE-LAAO **DO NOT APPROVE** the interim action as proposed in this Interim Action Plan for PRS 15-006(c).

The following reasons reflect the basis for this disapproval.

Signed: _____

Date: _____

**INTERIM ACTION PLAN
FOR POTENTIAL RELEASE SITE
15-007(C), REMOVAL OF VISIBLE LEAD SHOT**

JUNE 4, 1996

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**INTERIM ACTION PLAN FOR
POTENTIAL RELEASE SITE 15-007(c)**

REMOVAL OF VISIBLE LEAD SHOT

1.0 Rationale and Objectives of Interim Action

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).

This site poses a potential environmental hazard to wildlife, in particular to birds that could ingest the lead shot. Additionally, lead on the site would be subject to weathering cause flaking of the lead shot into particles that could be carried into the Threemile drainage path. This action will reduce the risk of exposure to wildlife and humans and will also reduce the migration potential.

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

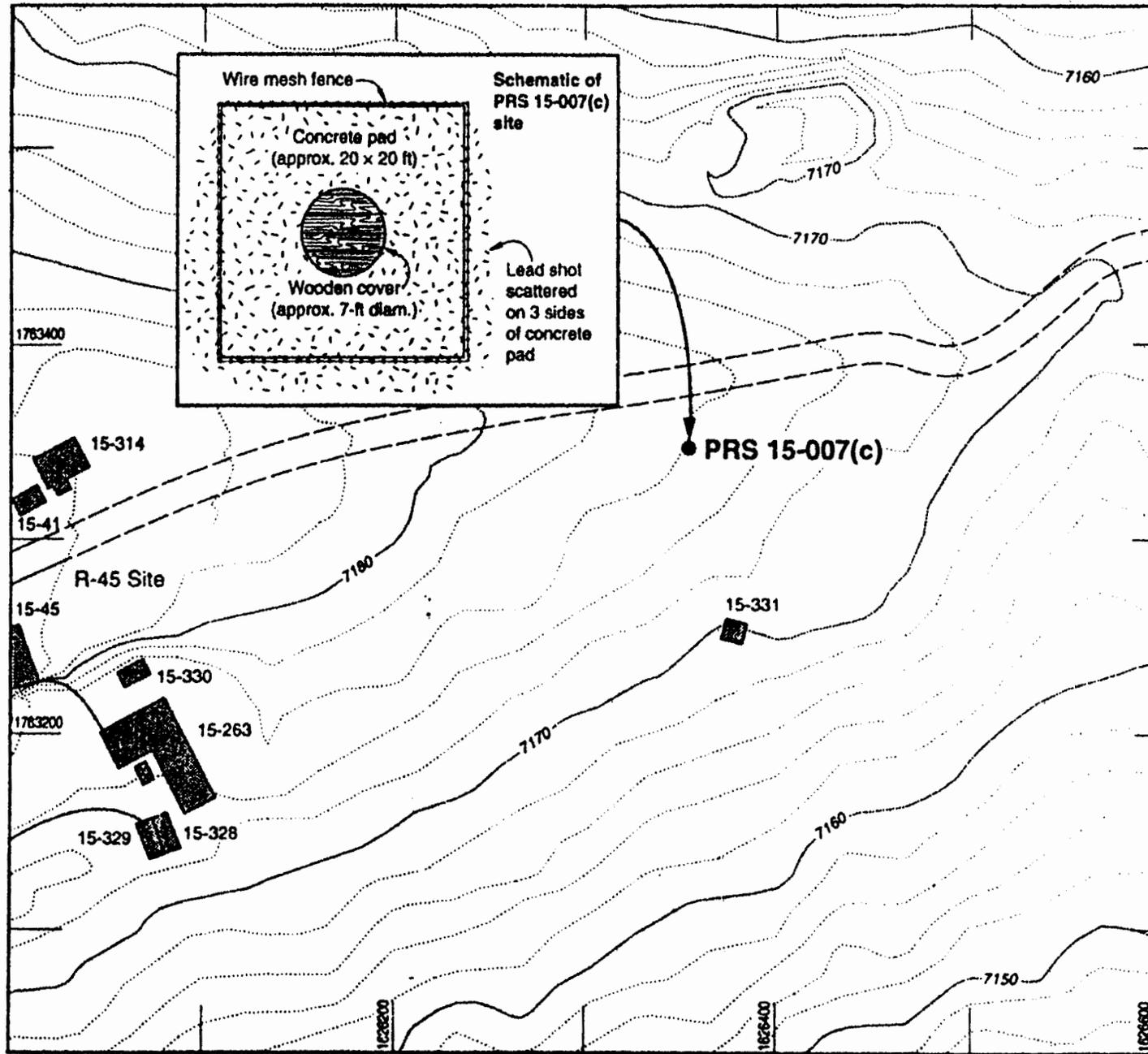
The total cost is expected to be \$55,300, which includes preparation, field work, disposal costs, demobilization, and report writing. The onsite work will be completed in three days. The Environmental Restoration Project is expected to save \$200 in hazardous waste disposal costs by having the lead recycled.

This interim action is not considered an accelerated cleanup; a cleanup 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 ingestion while the plan for the final remedy is being prepared and submitted for approval.

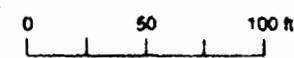
2.0 Site Description and Characterization Data

PRS 15-007(c) is 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 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 are exposed to lead at the site.



■ Building or structure
— Paved road
- - - Unimproved road or trail
Contour interval 2 ft



Source:
FINAD 3/14/95, G103159
Modified by:
cARTography by A. Kron 5/29/96



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

3.0 Interim Action

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 7.5).

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. 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.

3.2 Function of IA in Reducing Risk

This site poses an environmental hazard to wildlife, in particular to birds that could ingest the lead shot. Additionally, lead on the site would be subject to weathering cause flaking of the lead shot into particles could be carried into the Threemile drainage path. Removal of the lead shot will reduce the amount of lead available for causing risk of exposure to a documented source of lead, which could cause poisoning in terrestrial wildlife. Reducing the amount of lead available also protects the Threemile drainage path against the potential migration of lead particles.

Risk to human health is not being addressed in this interim action. However, the removal of obvious contaminants will lower risk to humans as well as wildlife by the prevention of possible deterioration and migration of the lead.

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 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 Liquincx[®] will have one grab sample analyzed for toxic characteristic (TC) metals, HE, semivolatle 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 appropriately.

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 and Cost

This activity will take 1 week to complete. Tentative start date is July 22, 1996.

TABLE 2
Cost Estimate

Activity	\$ Amount
Plan Development	\$28,000
Mobilization	7,500
Cleanup	6,600
Verification Sampling	0
Waste Disposal	2,000
Field Screening	1,500
Demobilization	1,000
Reporting	8,700
Total Estimated Cost	\$55,300

Recycling the lead shot will save the Environmental Restoration Project \$200 in hazardous waste disposal costs.

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 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 APPROVAL FORM

I, _____, DOE-LAAO **APPROVE** the interim action as proposed in this Interim Action Plan for PRS 15-007(c).

I, _____, DOE-LAAO **DO NOT APPROVE** the interim action as proposed in this Interim Action Plan for PRS 15-007(c).

The following reasons reflect the basis for this disapproval.

Signed: _____

Date: _____

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

June 4, 1996

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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, the uranium and DU on the site would be subject to weathering and possible dispersion or migration. Elimination of the exposed DU would reduce the exposure to wildlife and possible weathering and migration of the uranium and DU. Also, because the uranium and DU would be removed in a final remedy, removal of the uranium and DU at the surface is part of the final remedy.

Pieces of high explosives that are noted at the site will be flagged for the user group.

The total cost is expected to be \$93,000, which includes preparation, field work, disposal costs, demobilization, and report writing. The onsite work will be completed in two weeks.

This interim action is not considered an accelerated cleanup; a cleanup 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 while the final remedy is being prepared and submitted for approval.

2.0 Site Description and Characterization Data

PRS 15-004(f), Firing Sites D, E, and F, located at Technical Area (TA) -15, has been 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).

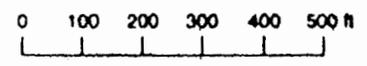
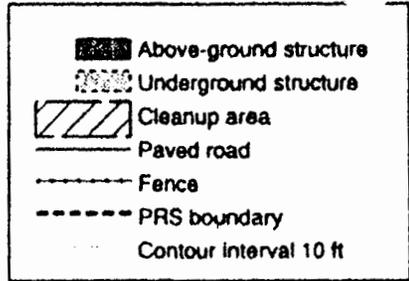
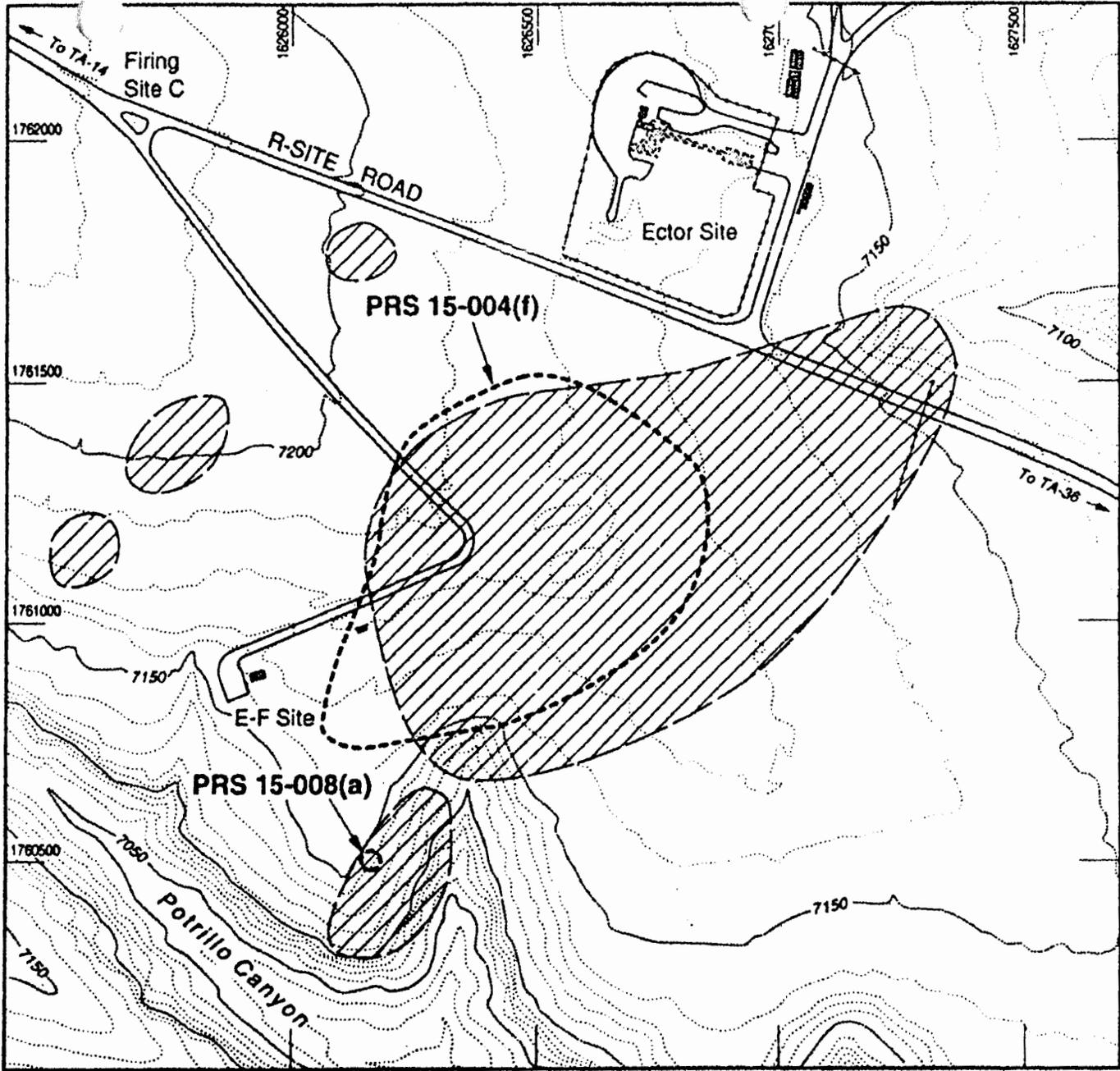
PRS 15-008(a), Surface Disposal, includes two small areas on the edge of a trough into Potrillo Canyon. These areas of debris include pieces of metal, plastics, electrical cable, soil, and other miscellaneous trash. The debris looks like discrete dump-truck loads (LANL 1993, 1087). These two areas were 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.

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



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



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

HE is noted, it will be flagged for removal by the user group. 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 remediation 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 sampling 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 be 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 Reducing Risk

The primary pathway of concern for wildlife exposure is ingestion of small pieces of uranium and DU. Removal of visible uranium pieces will reduce the source of small, weathered pieces of uranium and DU that may be ingested by wildlife.

Risk to human health is not being addressed in this interim action. However, the removal of obvious contaminants will lower risk to humans as well as wildlife by the prevention of possible deterioration and migration of the uranium and DU.

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 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 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
HE	Hazardous	< 1 20-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 (TC) metals, HE, semivolatile organic compounds, gamma scan, 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, Solid Radioactive Waste Management, 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 and Cost

This activity will take 2 weeks to complete. Tentative start date is August 6, 1996.

TABLE 2
Cost Estimate

Activity	\$ Amount
Plan Development	\$46,000
Mobilization	8,500
Cleanup	14,000
Verification Sampling	0
Waste Disposal	11,500
Field Screening	0
Demobilization	0
Reporting	13,000
Total Estimated Cost	\$93,000

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 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 APPROVAL FORM

I, _____, DOE-LAAO **APPROVE** the interim action as proposed in this Interim Action Plan for PRS 15-004(f) and 15-008(a).

I, _____, DOE-LAAO **DO NOT APPROVE** the interim action as proposed in this Interim Action Plan for PRS 15-004(f) and 15-008(a).

The following reasons reflect the basis for this disapproval.

Signed: _____

Date: _____