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Permit

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Date: September 27, 2001  
Refer to: ER2001-0789

Mr. John Young, Corrective Action Project Leader  
Permits Management Program  
NMED – Hazardous Waste Bureau  
2905 Rodeo Park Drive East  
Building 1  
Santa Fe, NM 87505-6303

**SUBJECT: SUBMITTAL OF DOCUMENTATION SUPPORTING NO FURTHER ACTION (NFA) FOR 18 SOLID WASTE MANAGEMENT UNITS (SWMUs)**

Dear Mr. Young:

The Department of Energy and the Los Alamos National Laboratory are submitting to your office, documentation supporting NFA for 18 SWMUs. This information packet has been compiled to facilitate the Annual Unit Audit/Permit Modification High Performance Team in the evaluation of these sites prior to the submittal of a formal Class III permit modification request from the facility.

Should you have any questions regarding this packet of information, please feel free to contact Dave McInroy at (505) 667-0819 or Mat Johansen at (505) 665-5046

Sincerely,

Julie A. Canepa, Program Manager  
Environmental Restoration Project  
Los Alamos National Laboratory

Sincerely,

Mat Johansen, Project Manager  
Department of Energy  
Los Alamos Area Office



TU

JC/MJ/SS/vn

Enclosure: 1) Documentation Supporting No Further Action for 18 Solid Waste  
Management Units  
2) Certification

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D. Neleigh, US EPA (2 copies)  
T. Trujillo, DOE-AL, MS A906  
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## CERTIFICATION

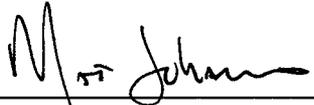
I certify under penalty of law that these documents and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violation.

Document Title: Documentation Supporting No Further Action For 18 Solid Waste Management Units, September 2001

Name:  Date: 9/25/01  
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LA-UR-01-5437  
ER2001-0787

**Los Alamos National Laboratory**

**Documentation**

**Supporting No Further Action**

**for 18 Solid Waste**

**Management Units**

**September 2001**

Produced by the Regulatory Compliance Focus Area

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## 1.0 INTRODUCTION

The Los Alamos National Laboratory (the Laboratory) is proposing to the New Mexico Environment Department (NMED) Hazardous Waste Bureau (HWB) to remove 18 solid waste management units (SWMUs) from the Environmental Restoration (ER) Project's scope through a Class III permit modification process. The proposals for these 18 units are based on federal and state regulations, field investigations, archival investigations, and/or site cleanups performed by the Laboratory's Environmental Restoration Project.

The definition of a solid waste management unit used in this proposal is from Module VIII, "Special Conditions Pursuant to the 1984 Hazardous and Solid Waste Amendments to RCRA," of the Laboratory's Hazardous Waste Facility Permit. This definition conforms to the SWMU definition presented in proposed Subpart S of the Resource Conservation and Recovery Act (RCRA) regulations in 40 CFR Part 264 (Federal Register, Vol. 55, No. 145, July 27, 1990) and was used to define SWMUs at the Laboratory. Thus, SWMUs are "any discernible unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. Such units include any area at or around a facility at which solid wastes have been routinely and systematically released."

Each unit included in this proposal has been evaluated against applicable regulations and standards. Fifteen of the units within this proposal have been evaluated and found to be exempt from the definition of RCRA solid waste and, therefore, are being proposed to be managed outside of the Laboratory's ER Project. The remaining three sites within this proposal are sites for which investigations and remediations (if necessary) have been completed and the ER Project has determined that no further action (NFA) is appropriate.

### 1.1 NFA Criteria

Within the Laboratory's ER Project, there are five criteria for proposing NFA for SWMUs. The NMED-HWB, the US Department of Energy (DOE), and the Laboratory have agreed upon these criteria for determining NFA. The five NFA criteria are listed below.

NFA Criterion 1. The site does not exist; is a duplicate of another site; cannot be located, or is located within another site, and has been or will be investigated as part of that site.

NFA Criterion 2. The site was never used for the management (that is, generation, treatment, storage or disposal) of RCRA solid or hazardous wastes and/or constituents.

NFA Criterion 3. The site is not known or suspected of releasing RCRA solid or hazardous wastes and/or constituents to the environment. The term "release" means any spilling, leaking, pouring, emitting, emptying, discharging, injecting, pumping, escaping, leaching, dumping, or disposing of hazardous wastes (including hazardous constituents) into the environment.

NFA Criterion 4. The site is regulated under another state and/or federal authority. If the site is known or suspected of releasing RCRA solid or hazardous wastes and/or constituents to the environment, it has been or will be investigated and/or remediated in accordance with the applicable state and/or federal regulations.

NFA Criterion 5. The site was characterized or remediated in accordance with applicable state and/or federal regulations, and the available data indicate that contaminants pose an acceptable level of risk under current and projected future land use.

An administrative NFA proposal based on Criteria 1 through 3 is supported by acceptable knowledge of process and/or documented information that indicates that there has not been a release at the site, thus precluding the need for characterization and/or remediation.

An NFA proposal based on Criterion 4 is supported by acceptable knowledge of process and/or documented information that confirms that if there was a release, the site was adequately characterized and/or remediated in accordance with a regulatory authority other than that which oversees RCRA corrective action. NFA Criterion 4 is based on the fact that cleanup levels prescribed under other regulatory authorities, such as the US Environmental Protection Agency (EPA) Toxic Substances Control Act (TSCA) or NMED Underground Storage Tank (UST) regulations, were developed to incorporate human health and ecological risk considerations. Therefore, SWMUs managed in accordance with other regulatory programs normally do not require subsequent action under RCRA corrective action. However, any of the above five criteria may be supported with confirmatory sampling when necessary.

An NFA proposal based on Criterion 5 is supported by data and acceptable knowledge of process and/or documented information that confirms that the site was adequately characterized and/or remediated in accordance with the Hazardous and Solid Waste Amendments of 1984 (HSWA) corrective action process.

## **1.2 Applicability of the Evaluation of Human Health Risk, Ecological Risk, and Other Applicable Regulations and Standards to NFA Criteria 1 Through 4**

NFA proposals based on administrative NFA Criteria 1 through 3 require adequate supporting documentation to establish justification for NFA. In certain cases, Criteria 1, 2, and 3 NFA proposals may require verification samples. However, Criteria 1, 2, and 3 NFA proposals generally do not require evaluations for risks to human health or the ecosystem, or an evaluation of the applicability of other regulations and standards.

An NFA proposal based on Criterion 4 (the site was remediated in accordance with another state and/or federal authority) indicates that these SWMUs are/were characterized and managed in accordance with the requirements specified in other applicable regulations and/or standards. Other applicable regulations and standards include surface water standards, groundwater standards, air emission standards, UST regulations, and PCB regulations. Human health and ecological risk evaluations are inherent in (or addressed by) the cleanup levels established by other regulatory authorities, such as TSCA requirements or NMED UST Bureau regulations. Such requirements or regulations specify the human health and ecologically based cleanup levels that must be met (in the event of a release) to achieve NFA. Criterion 4 SWMUs with a confirmed release require documentation confirming that the release was cleaned to the requirements and/or standards of the applicable regulatory authority.

## **1.3 Organization of this Proposal**

Documentation supporting each NFA proposal is attached. This documentation and rationale for each is grouped by unit type and NFA criterion. NFA proposal 1 includes munitions sites being proposed under NFA criterion 2. NFA proposal 2 includes a remediated bazooka impact area, SWMU 27-003, which was included in a 1996 permit modification request. Additional sampling was conducted at NMED's request. NFA proposal 3 is a former surface disposal area, 03-009(d), which was included in a 1995 request for permit modification; additional remediation activities have taken place per NMED's direction. NFA proposal 4 consists of an approved NFA request associated with consolidated SWMU 73-005-99, Contractors Row. The approval was received from NMED as a result of an RFI report and supporting documentation. The Environmental Restoration Project believes that Proposals 2, 3, and 4 meet NFA criterion 5.

**DOCUMENTATION SUPPORTING  
NFA FOR  
MUNITIONS SITES**

**11-001(b)  
11-004(a)-99  
15-003-00  
15-004(a)  
15-004(b)-99  
15-006(b)  
15-007(c)-00  
18-002(a)  
18-002(b)  
20-002(d)  
39-004(a)  
39-004(b)  
39-004(c)  
39-004(d)  
39-004(e)**

## 1.0 WEAPONS AND MUNITIONS RESEARCH, DEVELOPMENT, TESTING, AND EVALUATION SITES

### 1.1 Summary

The Laboratory operates weapons and munitions test and research sites that are exempt from RCRA under the military munitions rule. Fifteen of these sites are being proposed for NFA under NFA Criterion 2 (the site has never been used for the management of RCRA solid or hazardous wastes and/or constituents).

### 1.2 Description and Operational History

#### 1.2.1 Site Description

The following weapons/munitions test and research sites were identified as RCRA solid waste management units (SWMUs) during the 1987 RCRA facility assessment of the Laboratory.

- |                                |   |
|--------------------------------|---|
| 1. SWMU 11-001(b) Firing Site  | 12. Consolidated Unit 11-004(a)-99 containing the following drop tower components:<br>SWMUs 11-004(a), (b), (c), (d), (e), and AOC 11-004(f). |
| 2. SWMU 15-004(a) Firing Site  |   |
| 3. SWMU 15-006(b) Firing Site  |   |
| 4. SWMU 18-002(a) Firing Site  |   |
| 5. SWMU 18-002(b) Firing Site  | 13. Consolidated Unit 15-003-00 containing the following firing sites:<br>SWMUs 15-003 and 15-006(a).   |
| 6. SWMU 20-002(d) Firing Site  |   |
| 7. SWMU 39-004(a) Firing Site  | 14. Consolidated Unit 15-004(b)-99 containing the following firing sites:<br>SWMUs 15-004(b) and (c).   |
| 8. SWMU 39-004(b) Firing Site  |   |
| 9. SWMU 39-004(c) Firing Site  |   |
| 10. SWMU 39-004(d) Firing Site | 15. Consolidated Unit 15-007(c)-00 containing the following firing test shafts:<br>SWMUs 15-007(c) and (d).                                   |
| 11. SWMU 39-004(e) Firing Site |   |

However, munitions used in weapons research, development, testing, and evaluation programs do not meet the definition of a RCRA solid waste (or hazardous waste) under the US Environmental Protection Agency (EPA) finalized military munitions rule (40 CFR 266 Subpart M, "Military Munitions") (Attachment A). This rule became effective (i.e., codified federal law) August 12, 1997, and was adopted by NMED on June 14, 2001 (Title 20, Chapter 4, Part 1, Section 700 of the New Mexico Administrative Code).

When a munition is not managed off-range or disposed of on-range, it does not meet the definition of a RCRA solid waste. Therefore, these sites are not subject to RCRA regulations.

The rule amends the definitions provided in 40 CFR 260.10 by adding a definition for military munitions. The amended definition is included as Attachment B and specifically calls out "military munitions under the control of the . . . US Department of Energy (DOE)."

#### 1.2.2 Operational History

Each of the SWMUs listed in Section 1.2.1 of this request used munitions for the sole purpose of research, development, testing, and evaluation. As provided in 40 CFR 266.202(a)(1)(ii), such use is the intended use of munitions and constitutes the intended use of a product, rather than waste disposal.

### 1.3 Land Use

#### 1.3.1 Current

Each of the SWMUs listed in Section 1.2.1 of this request is located in an industrial area of the Laboratory with restricted access. A fence encloses each of the sites or each of the technical areas in which the sites are located. These security measures discourage the possibility of inadvertent site intrusion.

#### 1.3.2 Future/Proposed

The Laboratory does not anticipate a change in land use for the SWMUs listed above in Section 1.2.1 of this request. Industrial with restricted access is the expected land use for these sites for the operational life of the Laboratory (LANL 1995, 57224, pp.11–12) (Appendix D, Attachment 1).

### 1.4 No Further Action Proposal

#### 1.4.1 Rationale

The Laboratory ER Project is proposing SWMUs 11-001(b), 15-004(a), 15-006(b), 18-002(a), 18-002(b), 20-002(d), 39-004(a), 39-004(b), 39-004(c), 39-004(d), 39-004(e); and Consolidated Units 11-004(a)-99, 15-003-00, 15-004(b)-99, and 15-007(c)-00 for NFA. The NFA proposal is based on the following premise.

- The sole purpose of these sites is/was to perform activities including research, development, testing, and evaluation of military munitions, weapons, or weapons systems. The munitions at these sites do not meet the definition of solid waste (or hazardous waste) pursuant to 40 CFR 266.202(a)(1)(ii) [20.4.1.700 NMAC]. As provided in 40 CFR 266.202(a)(1)(ii) such use is the intended use of a product, rather than waste disposal.
- Because each site uses/used munitions for their intended purpose as defined in the 1997 codified law (thereby meeting the exemption criteria for RCRA waste provided in the finalized rule), none of these sites manages/managed or disposes/disposed RCRA solid or hazardous wastes.
- The Laboratory recognizes its responsibility to conduct all remedial action necessary for the protection of human health and the environment at these sites. Mechanisms exist to monitor and, if necessary, mitigate any environmental impact that may occur within the zone of munitions influence. When these sites are no longer operational or potentially operational, the Laboratory will ensure that the operating facility responsible for the site will evaluate it and perform any corrective action necessary. The responsible operating facilities are as follows:

| DIVISION                     | SWMUs   |
|------------------------------|---|
| Dynamic Experimentation (DX) | 15-004(a)<br>15-006(b)<br>20-002(d)<br>39-004(a), (b), (c), (d), and (e)<br>Consolidated Unit 15-003-00<br>Consolidated Unit 15-004(b)-99<br>Consolidated Unit 15-007(c)-00 |

| DIVISION  | SWMUs                                       |
|---|---|
| Emergency Sciences and Applications (ESA)         | 11-001(b)<br>Consolidated Unit 11-004(a)-99 |
| Nonproliferation and International Security (NIS) | 18-002(a) and (b)                           |

#### 1.4.2 Criterion

Based on the information presented in Sections 1.2 through 1.4 of this request, SWMUs 11-001(b), 15-004(a), 15-006(b), 18-002(a), 18-002(b), 20-002(d), 39-004(a), 39-004(b), 39-004(c), 39-004(d), 39-004(e); and Consolidated Units 11-004(a)-99, 15-003-00, 15-004(b)-99, and 15-007(c)-00 are being proposed for NFA under Criterion 2.

#### 1.5 Supporting Documentation Attached

Attachment A: 40 CFR 266 Subpart M, "Military Munitions," pp. 48-52.

Attachment B: 40 CFR 260.10, "Definitions," p. 12.

Appendix D, Attachment 1: LANL site development plan, annual update 1995, pp. 11–12. (LANL 1995, 57224)

#### 1.6 References Used for Text of the Request for Permit Modification

40 CFR 266 Subpart M, "Military Munitions," pp. 48-52.

40 CFR 260.10, "Definitions," p. 12.

#### 1.7 History of Regulatory Deliverables

This section is not applicable.

##### 1.7.1 References for Regulatory Deliverables

This section is not applicable.

## Attachment A

### § 266.200

40 CFR Ch. I (7-1-00 Edition)

(and the default level of 0.002 micrograms per kilogram or the level of detection for constituents as identified in Note 1 of appendix VII of this paragraph) are administratively stayed under the condition, for those constituents specified in paragraph (b)(1) of this section, that the owner or operator complies with alternative levels defined as the land disposal restriction limits specified in § 268.43 of this chapter for F039 nonwastewaters. In complying with those alternative levels, if an owner or operator is unable to detect a constituent despite documenting use of best good-faith efforts as defined by applicable Agency guidance or standards, the owner or operator is deemed to be in compliance for that constituent. Until new guidance or standards are developed, the owner or operator may demonstrate such good faith efforts by achieving a detection limit for the constituent that does not exceed an order of magnitude above the level provided by § 268.43 of this chapter for F039 nonwastewaters. In complying with the § 268.43 of this chapter F039 nonwastewater levels for polychlorinated dibenzo-p-dioxins and polychlorinated dibenzo-furans, analyses must be performed for total hexachlorodibenzo-p-dioxins, total hexachlorodibenzofurans, total pentachlorodibenzo-p-dioxins, total pentachlorodibenzofurans, total tetrachlorodibenzo-p-dioxins, and total tetrachlorodibenzofurans.

**NOTE TO THIS PARAGRAPH:** The administrative stay, under the condition that the owner or operator complies with alternative levels defined as the land disposal restriction limits specified in § 268.43 of this chapter for F039 nonwastewaters, remains in effect until further administrative action is taken and notice is published in the FEDERAL REGISTER and the Code of Federal Regulations.

(ii) *Metal constituents.* The concentration of metals in an extract obtained using the Toxicity Characteristic Leaching Procedure of § 261.24 of this chapter must not exceed the levels specified in appendix VII of this part; and

(iii) *Sampling and analysis.* Waste-derived residue shall be sampled and analyzed as often as necessary to determine whether the residue generated during each 24-hour period has concentrations of toxic constituents that

are higher than the health-based levels. Concentrations of toxic constituents of concern in the waste-derived residue shall be determined based on analysis of one or more samples obtained over a 24-hour period. Multiple samples may be analyzed, and multiple samples may be taken to form a composite sample for analysis provided that the sampling period does not exceed 24 hours. If more than one sample is analyzed to characterize waste-derived residues generated over a 24-hour period, the concentration of each toxic constituent shall be the arithmetic mean of the concentrations in the samples. No results may be disregarded; and

(c) Records sufficient to document compliance with the provisions of this section shall be retained until closure of the boiler or industrial furnace unit. At a minimum, the following shall be recorded.

(1) Levels of constituents in appendix VIII, part 261, that are present in waste-derived residues;

(2) If the waste-derived residue is compared with normal residue under paragraph (b)(1) of this section:

(i) The levels of constituents in appendix VIII, part 261, that are present in normal residues; and

(ii) Data and information, including analyses of samples as necessary, obtained to determine if changes in raw materials or fuels would reduce the concentration of toxic constituents of concern in the normal residue.

[50 FR 666, Jan. 4, 1985, as amended at 56 FR 42516, Aug. 27, 1991; 57 FR 38566, Aug. 25, 1992; 58 FR 59602, Nov. 9, 1993; 64 FR 53076, Sept. 30, 1999]

### Subparts I-L [Reserved]

### Subpart M—Military Munitions

SOURCE: 62 FR 6654, Feb. 12, 1997, unless otherwise noted.

#### § 266.200 Applicability.

(a) The regulations in this subpart identify when military munitions become a solid waste, and, if these wastes are also hazardous under this subpart or 40 CFR part 261, the management standards that apply to these wastes.

(b) Unless otherwise specified in this subpart, all applicable requirements in 40 CFR parts 260 through 270 apply to waste military munitions.

#### § 266.201 Definitions.

In addition to the definitions in 40 CFR 260.10, the following definitions apply to this subpart:

*Active range* means a military range that is currently in service and is being regularly used for range activities.

*Chemical agents and munitions* are defined as in 50 U.S.C. section 1521(j)(1).

*Director* is as defined in 40 CFR 270.2.

*Explosives or munitions emergency response specialist* is as defined in 40 CFR 260.10.

*Explosives or munitions emergency* is as defined in 40 CFR 260.10.

*Explosives or munitions emergency response* is as defined in 40 CFR 260.10.

*Inactive range* means a military range that is not currently being used, but that is still under military control and considered by the military to be a potential range area, and that has not been put to a new use that is incompatible with range activities.

*Military* means the Department of Defense (DOD), the Armed Services, Coast Guard, National Guard, Department of Energy (DOE), or other parties under contract or acting as an agent for the foregoing, who handle military munitions.

*Military munitions* is as defined in 40 CFR 260.10.

*Military range* means designated land and water areas set aside, managed, and used to conduct research on, develop, test, and evaluate military munitions and explosives, other ordnance, or weapon systems, or to train military personnel in their use and handling. Ranges include firing lines and positions, maneuver areas, firing lanes, test pads, detonation pads, impact areas, and buffer zones with restricted access and exclusionary areas.

*Unexploded ordnance (UXO)* means military munitions that have been primed, fused, armed, or otherwise prepared for action, and have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installation, personnel, or material and remain

unexploded either by malfunction, design, or any other cause.

#### § 266.202 Definition of solid waste.

(a) A military munition is not a solid waste when:

(1) Used for its intended purpose, including:

(i) Use in training military personnel or explosives and munitions emergency response specialists (including training in proper destruction of unused propellant or other munitions); or

(ii) Use in research, development, testing, and evaluation of military munitions, weapons, or weapon systems; or

(iii) Recovery, collection, and on-range destruction of unexploded ordnance and munitions fragments during range clearance activities at active or inactive ranges. However, "use for intended purpose" does not include the on-range disposal or burial of unexploded ordnance and contaminants when the burial is not a result of product use.

(2) An unused munition, or component thereof, is being repaired, reused, recycled, reclaimed, disassembled, reconfigured, or otherwise subjected to materials recovery activities, unless such activities involve use constituting disposal as defined in 40 CFR 261.2(c)(1), or burning for energy recovery as defined in 40 CFR 261.2(c)(2).

(b) An unused military munition is a solid waste when any of the following occurs:

(1) The munition is abandoned by being disposed of, burned, detonated (except during intended use as specified in paragraph (a) of this section), incinerated, or treated prior to disposal; or

(2) The munition is removed from storage in a military magazine or other storage area for the purpose of being disposed of, burned, or incinerated, or treated prior to disposal, or

(3) The munition is deteriorated or damaged (e.g., the integrity of the munition is compromised by cracks, leaks, or other damage) to the point that it cannot be put into serviceable condition, and cannot reasonably be recycled or used for other purposes; or

(4) The munition has been declared a solid waste by an authorized military official.

(c) A used or fired military munition is a solid waste:

(1) When transported off range or from the site of use, where the site of use is not a range, for the purposes of storage, reclamation, treatment, disposal, or treatment prior to disposal; or

(2) If recovered, collected, and then disposed of by burial, or landfilling either on or off a range.

(d) For purposes of RCRA section 1004(27), a used or fired military munition is a solid waste, and, therefore, is potentially subject to RCRA corrective action authorities under sections 3004(u) and (v), and 3008(h), or imminent and substantial endangerment authorities under section 7003, if the munition lands off-range and is not promptly rendered safe and/or retrieved. Any imminent and substantial threats associated with any remaining material must be addressed. If remedial action is infeasible, the operator of the range must maintain a record of the event for as long as any threat remains. The record must include the type of munition and its location (to the extent the location is known).

**§ 266.203 Standards applicable to the transportation of solid waste military munitions.**

(a) *Criteria for hazardous waste regulation of waste non-chemical military munitions in transportation.* (1) Waste military munitions that are being transported and that exhibit a hazardous waste characteristic or are listed as hazardous waste under 40 CFR part 261, are listed or identified as a hazardous waste (and thus are subject to regulation under 40 CFR parts 260 through 270), unless all the following conditions are met:

(i) The waste military munitions are not chemical agents or chemical munitions;

(ii) The waste military munitions must be transported in accordance with the Department of Defense shipping controls applicable to the transport of military munitions;

(iii) The waste military munitions must be transported from a military owned or operated installation to a military owned or operated treatment, storage, or disposal facility; and

(iv) The transporter of the waste must provide oral notice to the Director within 24 hours from the time the transporter becomes aware of any loss or theft of the waste military munitions, or any failure to meet a condition of paragraph (a)(1) of this section that may endanger health or the environment. In addition, a written submission describing the circumstances shall be provided within 5 days from the time the transporter becomes aware of any loss or theft of the waste military munitions or any failure to meet a condition of paragraph (a)(1) of this section.

(2) If any waste military munitions shipped under paragraph (a)(1) of this section are not received by the receiving facility within 45 days of the day the waste was shipped, the owner or operator of the receiving facility must report this non-receipt to the Director within 5 days.

(3) The exemption in paragraph (a)(1) of this section from regulation as hazardous waste shall apply only to the transportation of non-chemical waste military munitions. It does not affect the regulatory status of waste military munitions as hazardous wastes with regard to storage, treatment or disposal.

(4) The conditional exemption in paragraph (a)(1) of this section applies only so long as all of the conditions in paragraph (a)(1) of this section are met.

(b) *Reinstatement of exemption.* If any waste military munition loses its exemption under paragraph (a)(1) of this section, an application may be filed with the Director for reinstatement of the exemption from hazardous waste transportation regulation with respect to such munition as soon as the munition is returned to compliance with the conditions of paragraph (a)(1) of this section. If the Director finds that reinstatement of the exemption is appropriate based on factors such as the transporter's provision of a satisfactory explanation of the circumstances of the violation, or a demonstration that the violations are not likely to recur, the Director may reinstate the exemption under paragraph (a)(1) of this section. If the Director does not take action on the reinstatement application within 60 days after receipt of the application, then reinstatement

shall be deemed granted, retroactive to the date of the application. However, the Director may terminate a conditional exemption reinstated by default in the preceding sentence if the Director finds that reinstatement is inappropriate based on factors such as the transporter's failure to provide a satisfactory explanation of the circumstances of the violation, or failure to demonstrate that the violations are not likely to recur. In reinstating the exemption under paragraph (a)(1) of this section, the Director may specify additional conditions as are necessary to ensure and document proper transportation to protect human health and the environment.

(c) *Amendments to DOD shipping controls.* The Department of Defense shipping controls applicable to the transport of military munitions referenced in paragraph (a)(1)(ii) of this section are Government Bill of Lading (GBL) (GSA Standard Form 1109), requisition tracking form DD Form 1348, the Signature and Talley Record (DD Form 1907), Special Instructions for Motor Vehicle Drivers (DD Form 836), and the Motor Vehicle Inspection Report (DD Form 626) in effect on November 8, 1995, except as provided in the following sentence. Any amendments to the Department of Defense shipping controls shall become effective for purposes of paragraph (a)(1) of this section on the date the Department of Defense publishes notice in the FEDERAL REGISTER that the shipping controls referenced in paragraph (a)(1)(ii) of this section have been amended.

**§ 266.204 Standards applicable to emergency responses.**

Explosives and munitions emergencies involving military munitions or explosives are subject to 40 CFR 262.10(i), 263.10(e), 264.1(g)(8), 265.1(c)(11), and 270.1(c)(3), or alternatively to 40 CFR 270.61.

**§ 266.205 Standards applicable to the storage of solid waste military munitions.**

(a) *Criteria for hazardous waste regulation of waste non-chemical military munitions in storage.* (1) Waste military munitions in storage that exhibit a hazardous waste characteristic or are list-

ed as hazardous waste under 40 CFR Part 261, are listed or identified as a hazardous waste (and thus are subject to regulation under 40 CFR Parts 260 through 279), unless all the following conditions are met:

(i) The waste military munitions are not chemical agents or chemical munitions.

(ii) The waste military munitions must be subject to the jurisdiction of the Department of Defense Explosives Safety Board (DDESB).

(iii) The waste military munitions must be stored in accordance with the DDESB storage standards applicable to waste military munitions.

(iv) Within 90 days of August 12, 1997 or within 90 days of when a storage unit is first used to store waste military munitions, whichever is later, the owner or operator must notify the Director of the location of any waste storage unit used to store waste military munitions for which the conditional exemption in paragraph (a)(1) is claimed.

(v) The owner or operator must provide oral notice to the Director within 24 hours from the time the owner or operator becomes aware of any loss or theft of the waste military munitions, or any failure to meet a condition of paragraph (a)(1) that may endanger health or the environment. In addition, a written submission describing the circumstances shall be provided within 5 days from the time the owner or operator becomes aware of any loss or theft of the waste military munitions or any failure to meet a condition of paragraph (a)(1) of this section.

(vi) The owner or operator must inventory the waste military munitions at least annually, must inspect the waste military munitions at least quarterly for compliance with the conditions of paragraph (a)(1) of this section, and must maintain records of the findings of these inventories and inspections for at least three years.

(vii) Access to the stored waste military munitions must be limited to appropriately trained and authorized personnel.

(2) The conditional exemption in paragraph (a)(1) of this section from regulation as hazardous waste shall

apply only to the storage of non-chemical waste military munitions. It does not affect the regulatory status of waste military munitions as hazardous wastes with regard to transportation, treatment or disposal.

(3) The conditional exemption in paragraph (a)(1) of this section applies only so long as all of the conditions in paragraph (a)(1) of this section are met.

(b) Notice of termination of waste storage. The owner or operator must notify the Director when a storage unit identified in paragraph (a)(1)(iv) of this section will no longer be used to store waste military munitions.

(c) Reinstatement of conditional exemption. If any waste military munition loses its conditional exemption under paragraph (a)(1) of this section, an application may be filed with the Director for reinstatement of the conditional exemption from hazardous waste storage regulation with respect to such munition as soon as the munition is returned to compliance with the conditions of paragraph (a)(1) of this section. If the Director finds that reinstatement is appropriate based on factors such as the owner's or operator's provision of a satisfactory explanation of the circumstances of the violation, or a demonstration that the violations are not likely to recur, the Director may reinstate the conditional exemption under paragraph (a)(1) of this section. If the Director does not take action on the reinstatement application within 60 days after receipt of the application, then reinstatement shall be deemed granted, retroactive to the date of the application. However, the Director may terminate a conditional exemption reinstated by default in the preceding sentence if he/she finds that reinstatement is inappropriate based on factors such as the owner's or operator's failure to provide a satisfactory explanation of the circumstances of the violation, or failure to demonstrate that the violations are not likely to recur.

In reinstating the conditional exemption under paragraph (a)(1) of this section, the Director may specify additional conditions as are necessary to ensure and document proper storage to protect human health and the environment.

(d) Waste chemical munitions. (1) Waste military munitions that are chemical agents or chemical munitions and that exhibit a hazardous waste characteristic or are listed as hazardous waste under 40 CFR Part 261, are listed or identified as a hazardous waste and shall be subject to the applicable regulatory requirements of RCRA subtitle C.

(2) Waste military munitions that are chemical agents or chemical munitions and that exhibit a hazardous waste characteristic or are listed as hazardous waste under 40 CFR Part 261, are not subject to the storage prohibition in RCRA section 3004(j), codified at 40 CFR 268.50.

(e) Amendments to DDESB storage standards. The DDESB storage standards applicable to waste military munitions, referenced in paragraph (a)(1)(iii) of this section, are DOD 6055.9-STD ("DOD Ammunition and Explosive Safety Standards"), in effect on November 8, 1995, except as provided in the following sentence. Any amendments to the DDESB storage standards shall become effective for purposes of paragraph (a)(1) of this section on the date the Department of Defense publishes notice in the FEDERAL REGISTER that the DDESB standards referenced in paragraph (a)(1) of this section have been amended.

**§ 266.206 Standards applicable to the treatment and disposal of waste military munitions.**

The treatment and disposal of hazardous waste military munitions are subject to the applicable permitting, procedural, and technical standards in 40 CFR Parts 260 through 270.

## Attachment B

### § 260.10

40 CFR Ch. I (7-1-01 Edition)

a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground mine, a cave, or a corrective action management unit.

*Landfill cell* means a discrete volume of a hazardous waste landfill which uses a liner to provide isolation of wastes from adjacent cells or wastes. Examples of landfill cells are trenches and pits.

*Land treatment facility* means a facility or part of a facility at which hazardous waste is applied onto or incorporated into the soil surface; such facilities are disposal facilities if the waste will remain after closure.

*Leachate* means any liquid, including any suspended components in the liquid, that has percolated through or drained from hazardous waste.

*Leak-detection system* means a system capable of detecting the failure of either the primary or secondary containment structure or the presence of a release of hazardous waste or accumulated liquid in the secondary containment structure. Such a system must employ operational controls (e.g., daily visual inspections for releases into the secondary containment system of aboveground tanks) or consist of an interstitial monitoring device designed to detect continuously and automatically the failure of the primary or secondary containment structure or the presence of a release of hazardous waste into the secondary containment structure.

*Liner* means a continuous layer of natural or man-made materials, beneath or on the sides of a surface impoundment, landfill, or landfill cell, which restricts the downward or lateral escape of hazardous waste, hazardous waste constituents, or leachate.

*Management or hazardous waste management* means the systematic control of the collection, source separation, storage, transportation, processing, treatment, recovery, and disposal of hazardous waste.

*Manifest* means the shipping document EPA form 8700-22 and, if necessary, EPA form 8700-22A, originated and signed by the generator in accordance with the instructions included in the appendix to part 262.

*Manifest document number* means the U.S. EPA twelve digit identification number assigned to the generator plus a unique five digit document number assigned to the Manifest by the generator for recording and reporting purposes.

*Military munitions* means all ammunition products and components produced or used by or for the U.S. Department of Defense or the U.S. Armed Services for national defense and security, including military munitions under the control of the Department of Defense, the U.S. Coast Guard, the U.S. Department of Energy (DOE), and National Guard personnel. The term military munitions includes: confined gaseous, liquid, and solid propellants, explosives, pyrotechnics, chemical and riot control agents, smokes, and incendiaries used by DOD components, including bulk explosives and chemical warfare agents, chemical munitions, rockets, guided and ballistic missiles, bombs, warheads, mortar rounds, artillery ammunition, small arms ammunition, grenades, mines, torpedoes, depth charges, cluster munitions and dispensers, demolition charges, and devices and components thereof. Military munitions do not include wholly inert items, improvised explosive devices, and nuclear weapons, nuclear devices, and nuclear components thereof. However, the term does include non-nuclear components of nuclear devices, managed under DOE's nuclear weapons program after all required sanitization operations under the Atomic Energy Act of 1954, as amended, have been completed.

*Mining overburden returned to the mine site* means any material overlying an economic mineral deposit which is removed to gain access to that deposit and is then used for reclamation of a surface mine.

*Miscellaneous unit* means a hazardous waste management unit where hazardous waste is treated, stored, or disposed of and that is not a container, tank, surface impoundment, pile, land treatment unit, landfill, incinerator, boiler, industrial furnace, underground injection well with appropriate technical standards under part 146 of this

**DOCUMENTATION SUPPORTING  
NFA FOR  
FORMER BAZOOKA IMPACT AREA  
27-003**

## **CONFIRMATION SAMPLE RESULTS FOR SWMU 27-003**

### **BACKGROUND**

In the September 1996 request for permit modification, the ER Project proposed SWMU 27-003 for removal from the Laboratory's Hazardous Waste Facility Permit. The Annual Unit Audit/Permit Modification high-performing team (HPT) had a series of meetings during 1999 and 2000 to promote NFA concurrence on several of these sites. During those meetings and in subsequent site visits, NMED requested ER to take 1 to 4 additional confirmation samples in support of NFA. NMED personnel stated that once analytical results confirmed NFA Criterion and following a site visit, NMED would concur with the NFA request for that site and proceed with the permit modification.

### **SWMU 27-003, FORMER BAZOOKA IMPACT AREA**

SWMU 27-003 is a former target practice area used by the US Army from 1944 until 1947. The SWMU is located approximately one-quarter mile northeast of the former Technical Area 18 sewage lagoons, at the base of the cliffs north of Pajarito Road and along the northern edge of the main Pajarito Canyon drainage channel. A program to periodically sweep all munitions from this area was conducted beginning in the 1960s and discontinued in the 1980s. The target area lies on the steep slope of the north wall of the canyon below the rim. The ordnance fired at the cliff face consisted of 2.36-in. rocket-propelled bazooka rounds, typically with armor-piercing, shape-charge ordnance. The nature of the hazard was possible unexploded ordnance and fuses buried in the soil or talus. A RCRA facility investigation (RFI) was conducted at this site in 1993 to remove all unexploded bazooka rounds and to recover all ordnance debris from the SWMU. Visual surveys, augmented with metal detectors, were used to identify debris from the firings. Approximately 3200 pieces of ordnance debris were removed during Phase I of the RFI. Following Phase I, six confirmatory samples were collected near the base of the cliff or point of impact; however, results were reported only for five samples. The whereabouts of the sixth sample and/or its results is unknown. The samples were analyzed for total metals and for barium, copper, and lead. Barium is a common component of explosives, and copper and lead are components of projectiles. The geographic pattern of recovered material indicated that the impact area was localized and its extent defined. Sampling data indicated that HE was not detected in any of the soil samples. Barium and lead were detected below their background values (BV) in all five samples. Copper was detected below its BV in four samples and above the BV of (14.7 ppm) in one sample at 17.5 ppm. Due to the lost sample and the single copper detect, additional samples to confirm extent were necessary to support the NFA determination.

This SWMU was proposed for NFA in the RFI report for TA-18 and TA-27 in January 1995 and in the September 1996 request for permit modification under Criterion 5 (characterized in accordance with applicable state and federal regulations). In the notice of determination (NOD) to the request for permit modification, NMED requested additional information about the number of RFI samples and the resulting data and expressed concern that five samples may not be sufficient to cover the SWMU. In the 1997 NOD response, the Laboratory temporarily withdrew the NFA request for this SWMU. In January 1999, NMED requested additional documentation on the site and in July 1999, NMED indicated that confirmation samples would be required to support the NFA. To confirm the nature and extent of any residual metals or high explosive (HE) contamination at this site in support of the pending NFA determination, Laboratory personnel collected six additional confirmation samples. The additional confirmation sample locations extended toward the south and southeast within the drainage area of the site.

Four soil and two sediment samples were collected for TAL metals and high explosives analyses (see attached map). Samples were biased on the downhill side of the SWMU and in stormwater channels that may have transported contaminants from the site. Analytical results yielded non-detects for all high explosives analyses. Inorganic analyses yielded three samples with zinc values above the background value (BV) of 48.8 mg/kg for zinc in soil (LANL 1998, 59730).

However, all three values were within the range of background concentration (14mg/kg to 75.5 mg/kg) (LANL 1998, 59730). All other inorganic analyses yielded inorganic values less than the BV.

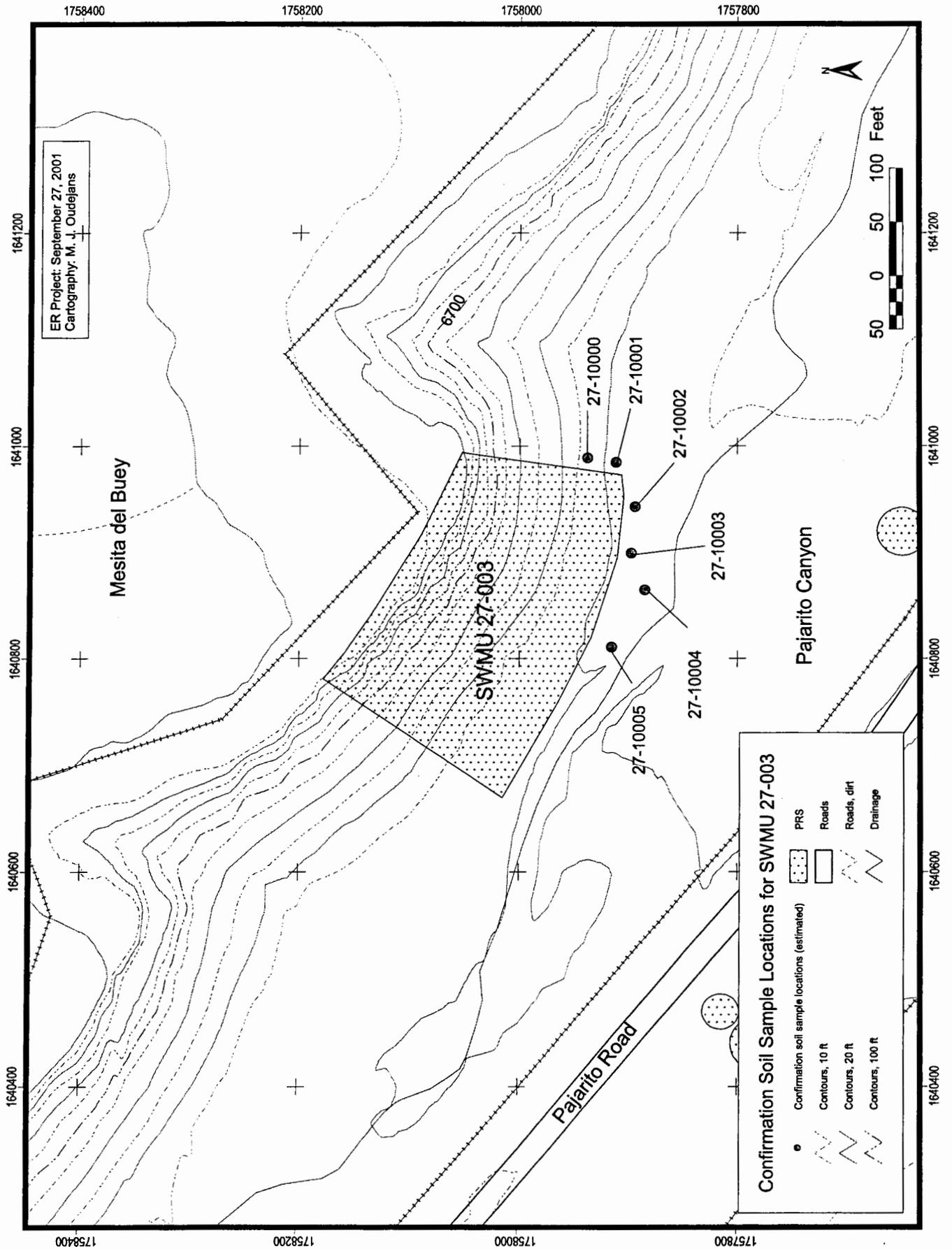
Based on the results of the confirmatory samples, the Laboratory requests NFA for PRS 27-003 under Criterion 5 (the site was characterized or remediated in accordance with applicable state and/or federal regulations, and the available data indicate that contaminants pose an acceptable level of risk under current and projected future land use).

A summary of analytical results is provided in the following table.

| Analyte         | Media    | Number of Analyses | Number of Detects | Concentration Range (mg/kg) | BV* (mg/kg) | Frequency of Detects above BV (mg/kg) | Frequency of Non-detects above BV (mg/kg) |
|-----------------|----------|--------------------|-------------------|-----------------------------|-------------|---------------------------------------|---|
| Aluminum        | Soil     | 4                  | 4                 | 3640 to 7270                | 29200       | 0/4                                   | 0/0                                       |
| Aluminum        | Sediment | 2                  | 2                 | 6290 to 7250                | 15400       | 0/2                                   | 0/0                                       |
| Antimony        | Soil     | 4                  | 0                 | [0.19 to 0.2]               | 0.83        | 0/4                                   | 0/4                                       |
| Antimony        | Sediment | 2                  | 0                 | [0.19 to 0.2]               | 0.83        | 0/2                                   | 0/2                                       |
| Arsenic         | Soil     | 4                  | 4                 | 1.7 to 2.4                  | 8.17        | 0/4                                   | 0/0                                       |
| Arsenic         | Sediment | 2                  | 2                 | 1.9 to 2.6                  | 3.98        | 0/2                                   | 0/0                                       |
| Barium          | Soil     | 4                  | 4                 | 34.5 to 108                 | 295         | 0/4                                   | 0/0                                       |
| Barium          | Sediment | 2                  | 2                 | 58.7 to 81.9                | 127         | 0/2                                   | 0/0                                       |
| Beryllium       | Soil     | 4                  | 4                 | 0.41 to 0.61                | 1.83        | 0/4                                   | 0/0                                       |
| Beryllium       | Sediment | 2                  | 2                 | 0.57 to 0.63                | 1.31        | 0/2                                   | 0/0                                       |
| Cadmium         | Soil     | 4                  | 0                 | [0.03 to 0.03]              | 0.4         | 0/4                                   | 0/4                                       |
| Cadmium         | Sediment | 2                  | 0                 | [0.03 to 0.03]              | 0.4         | 0/2                                   | 0/2                                       |
| Calcium         | Soil     | 4                  | 4                 | 1280 to 2670                | 6120        | 0/4                                   | 0/0                                       |
| Calcium         | Sediment | 2                  | 2                 | 961 to 2040                 | 4420        | 0/2                                   | 0/0                                       |
| Chromium, Total | Soil     | 4                  | 4                 | 2.8 to 5.5                  | 19.3        | 0/4                                   | 0/0                                       |
| Chromium, Total | Sediment | 2                  | 2                 | 5 to 5.9                    | 10.5        | 0/2                                   | 0/0                                       |
| Cobalt          | Soil     | 4                  | 4                 | 1.1 to 3.8                  | 8.64        | 0/4                                   | 0/0                                       |
| Cobalt          | Sediment | 2                  | 2                 | 2.4 to 2.7                  | 4.73        | 0/2                                   | 0/0                                       |
| Copper          | Soil     | 4                  | 4                 | 3.5 to 5.1                  | 14.7        | 0/4                                   | 0/0                                       |
| Copper          | Sediment | 2                  | 2                 | 4.9 to 5.4                  | 11.2        | 0/2                                   | 0/0                                       |
| Iron            | Soil     | 4                  | 4                 | 7380 to 10600               | 21500       | 0/4                                   | 0/0                                       |
| Iron            | Sediment | 2                  | 2                 | 9840 to 10700               | 13800       | 0/2                                   | 0/0                                       |
| Lead            | Soil     | 4                  | 4                 | 8.4 to 10.8                 | 22.3        | 0/4                                   | 0/0                                       |
| Lead            | Sediment | 2                  | 2                 | 9 to 9.7                    | 19.7        | 0/2                                   | 0/0                                       |
| Magnesium       | Soil     | 4                  | 4                 | 725 to 1200                 | 4610        | 0/4                                   | 0/0                                       |
| Magnesium       | Sediment | 2                  | 2                 | 868 to 1210                 | 2370        | 0/2                                   | 0/0                                       |
| Manganese       | Soil     | 4                  | 4                 | 288 to 566                  | 671         | 0/4                                   | 0/0                                       |
| Manganese       | Sediment | 2                  | 2                 | 286 to 363                  | 543         | 0/2                                   | 0/0                                       |
| Mercury         | Soil     | 4                  | 0                 | [0.02 to 0.02]              | 0.1         | 0/4                                   | 0/4                                       |
| Mercury         | Sediment | 2                  | 0                 | [0.02 to 0.02]              | 0.1         | 0/2                                   | 0/2                                       |
| Nickel          | Soil     | 4                  | 4                 | 2.2 to 4.5                  | 15.4        | 0/4                                   | 0/0                                       |

| Analyte   | Media    | Number of Analyses | Number of Detects | Concentration Range (mg/kg) | BV* (mg/kg) | Frequency of Detects above BV (mg/kg) | Frequency of Non-detects above BV (mg/kg) |
|-----------|----------|--------------------|-------------------|-----------------------------|-------------|---------------------------------------|---|
| Nickel    | Sediment | 2                  | 2                 | 3.9 to 4.5                  | 9.38        | 0/2                                   | 0/0                                       |
| Potassium | Soil     | 4                  | 4                 | 1020 to 1750                | 3460        | 0/4                                   | 0/0                                       |
| Potassium | Sediment | 2                  | 2                 | 1380 to 1510                | 2690        | 0/2                                   | 0/0                                       |
| Selenium  | Soil     | 4                  | 1                 | [0.26 to 0.27]              | 1.52        | 0/4                                   | 0/3                                       |
| Selenium  | Sediment | 2                  | 0                 | [0.27 to 0.27]              | 0.3         | 0/2                                   | 0/2                                       |
| Silver    | Soil     | 4                  | 1                 | [0.1 to 0.1]                | 1           | 0/4                                   | 0/3                                       |
| Silver    | Sediment | 2                  | 0                 | [0.1 to 0.1]                | 1           | 0/2                                   | 0/2                                       |
| Sodium    | Soil     | 4                  | 4                 | 158 to 197                  | 915         | 0/4                                   | 0/0                                       |
| Sodium    | Sediment | 2                  | 2                 | 158 to 162                  | 1470        | 0/2                                   | 0/0                                       |
| Thallium  | Soil     | 4                  | 0                 | [0.38 to 0.41]              | 0.73        | 0/4                                   | 0/4                                       |
| Thallium  | Sediment | 2                  | 0                 | [0.4 to 0.41]               | 0.73        | 0/2                                   | 0/2                                       |
| Vanadium  | Soil     | 4                  | 4                 | 6.2 to 13.2                 | 39.6        | 0/4                                   | 0/0                                       |
| Vanadium  | Sediment | 2                  | 2                 | 11.4 to 13.2                | 19.7        | 0/2                                   | 0/0                                       |
| Zinc      | Soil     | 4                  | 4                 | 45.3 to 52.5                | 48.8        | 3/4                                   | 0/0                                       |
| Zinc      | Sediment | 2                  | 2                 | 44.8 to 47.5                | 60.2        | 0/2                                   | 0/0                                       |

\* Background values from *Inorganic and Radionuclide Data for Soils, Sediments, and Bandelier Tuff at Los Alamos National Laboratory*, ER ID #59730.



**DOCUMENTATION SUPPORTING  
NFA FOR  
FORMER SURFACE DISPOSAL AREA  
03-009(d)**

## **8/23/01 SITE VISIT, SWMU 03-009(d)**

### **BACKGROUND**

In the September 1995 request for permit modification, the ER Project proposed SWMU 03-009(d) for removal from the Los Alamos National Laboratory's (Laboratory's) Hazardous Waste Facility Permit. This SWMU consisted of a small site (approximately 20 by 40 ft) which had been used for the surface disposal of construction debris. A storm culvert from a sizeable asphalt-paved parking lot emptied onto the site, resulting in the erosion of a large drainage channel (see attached October 4, 1995, photograph). Tree branches and chunks of concrete had been thrown into the channel to prevent additional erosion (see attached October 4, 1995, photograph). The permit modification request notice of determination (NOD) comment received on this site is as follows: "Best management practices should be employed at this site to ensure that no material is transported to the streambed." (LANL 1997, 55510). The ER Project's response to this New Mexico Environment Department (NMED) comment is as follows: "The asphalt is hard, and will not contribute to erosion. The concrete pieces in the gully are actually helping to mitigate sediment movement. The Laboratory will consider additional best management practices if requested by NMED." (LANL 1997, 55510). Although NMED has not yet concurred with no further action (NFA) for this site, the Annual Unit Audit/Permit Modification High Performing team (HPT) has been working to arrive at concurrence. During 1999 and 2000, this HPT had a series of meetings to promote NFA concurrence on several sites. At one of those meetings, NMED requested ER to remove the debris from within the drainage. NMED personnel stated that once the debris had been removed, NMED would concur with the NFA request for this site.

### **RESTORATION ACTIVITIES**

The joint Laboratory/NMED/DOE Surface Water Assessment Team (SWAT) had reviewed the site in February of 1999. As a result of this review, the SWAT requested that the debris be removed from the drainage and that a gabion be installed to prevent additional erosion (3 photographs taken during the August 23, 2001, visit are attached). Personnel from the Laboratory's Water Quality and Hydrology Group (ESH-18) removed the debris that was in the stream channel and was not used to mitigate sediment movement and installed a gabion in August of 1999. Once the gabion was installed, ESH-18 personnel updated the Standard Operating Procedure (SOP) 2.01 Surface Water Assessment for this site. Before the installation of the best management practices (BMP), the erosion matrix score was 64.8 (indicating high erosion potential). After installation of the BMP, the erosion matrix score for this site dropped to 42.8 (the SWAT considers an erosion score of 40 or less to indicate low erosion potential). The site is stable, and the gabions appear to be functioning successfully and have significantly reduced erosion. After installation of the BMP at this site, the ER Project has been responsible for inspecting and maintaining the BMP. Inspections were conducted quarterly for one year. The site has achieved final stabilization as required under the Multisector General Permit and will no longer be inspected at this frequency.

Note: The SOP 2.01 Surface Water Assessment and SWAT recommended actions for SWMU 03-009(d) have been attached to expedite review.



**03-009(d) Before Installation of BMP (10-4-95)**



**03-009(d) After Installation of BMP (8-23-2001)**



**03-009(d) After Installation of BMP (8-23-2001)**



**03-009(d) After Installation of BMP (8-23-2001)**

## Surface Water Assessment Team (SWAT) Recommended and Proposed Actions for PRS 03-009(d)

|                          |           |                 |                         |
|--------------------------|-----------|-----------------|-------------------------|
| PRS:                     | 03-009(d) |                 |                         |
| SWAT Meeting Date:       | 2/11/1999 | FMU Contact:    | Padilla, Dave           |
| Official Submittal Date: | 2/22/1999 | ER Contact:     | Lopez-Escobed, Gabriela |
| Constituent Data:        |           | Erosion Matrix: | 64.8                    |

**General SWAT Comments:**

Construction debris surface disposal site consisting of asphalt, concrete, rebar and misc debris. Storm water culvert discharges through PRS. Site appears stable. No data exists for the site.

Date of Part B Revision:   Revisit Recommended Revisit Date:

**Revisit Comments:**

4/99: Site re-visited, photographed, and BMP recommendations completed.  
8/99: gabions installed along the base and sides of the drainage channel, asphalt pad above drainage was extended.

| Actions Recommended at SWAT Meeting: |   | Owner:  |        |
|--------------------------------------|---|---|--------|
| Item:                                | 1 | Photodocumentation needed.  | ESH-18 |
| Item:                                | 2 | Collect samples if knowledge of process cannot adequately show that contamination should not exist at site. | ER     |
| Item:                                | 3 | Flow dissipation controls are needed to impede impact of culvert discharges into drainage channel.          | FM     |

| Actions Proposed by ER, FM or ESH-18: |   | Owner:  | Target Date: | Actual Date: | BMP Related |                                     |
|---------------------------------------|---|---|--------------|--------------|-------------|-------------------------------------|
| Item:                                 | 1 | Photodocumentation and ESH-18 findings/recommendatons were made 4/30/99                   | ESH-18       | FY99         | 4/30/99     | <input type="checkbox"/>            |
| Item:                                 | 2 | Samples will be collected to support NFA for the site if KOP information is not adequate. | ER           | FY99         |             | <input type="checkbox"/>            |
| Item:                                 | 3 | Gabions were placed within channel.   | FM           | FY99         | 8/99        | <input checked="" type="checkbox"/> |

**INSPECTION & MAINTENANCE INFORMATION**

Description of Existing BMPs from Erosion Assessment

Tabular List of BMPs:

|                           |
|---------------------------|
| asphalt/concrete repaving |
| gabions                   |

Frequency  Contact  Records Held:

**General Comments:**

Permanent BMPs have stabilized the site. Inspections are no longer required (9/01).

# Los Alamos National Laboratory

Environment, Safety & Health Division  
 ESH-18 Water Quality & Hydrology Group

## Surface Water Assessment Erosion Matrix for PRS 03-009(d)

| CRITERIA EVALUATED                                     | Value      | Erosion/Sediment Transport Potential   |               |                  | Calculated Score |
|--|------------|--|---------------|------------------|------------------|
|  |            | Low  | Medium        | High             |                  |
|  |            | 0.1  | 0.5           | 1.0              |                  |
| <b>Site Setting (43)</b>                               |            |  |               |                  |                  |
| On mesa top  | 1          | Defined based on topographic setting   |               |                  | 4.0              |
| Within bench of canyon                                 | 4          |  |               |                  |                  |
| Within the canyon floodplain but not watercourse       | 13         |  |               |                  |                  |
| Within bottom of canyon channel in watercourse         | 17         |  |               |                  |                  |
| Estimated % ground and canopy cover                    | 13         | >75%   | 25-75%        | <25%             | 1.3              |
| Slope  | 13         | 0-10%  | 10-30%        | >30%             | 6.5              |
| <b>Surface Water Factors-Run-off (46)</b>              |            |  |               |                  |                  |
| Visible evidence of runoff discharging? (Yes/No)       | 5          | If no, score of 0 for runoff section.<br>If yes, score 5 and proceed with section. |               |                  | 5.0              |
| Where does runoff terminate?                           | 19         | Other  | Bench Setting | Drainage/Wetland | 19.0             |
| Has runoff caused visible erosion? (Yes/No)            | 22         | Sheet  | Rill          | Gully            | 0.0              |
| If no, score as 0. If yes, calculate as appropriate.   |            |  |               |                  |                  |
| <b>Surface Water Factors-Run-on (11)</b>               |            |  |               |                  |                  |
| Structures adversely affecting run-on (Yes/No)         | 7*         | If yes, score as 7. If no, score as 0.   |               |                  | 7.0              |
| Current operations adversely impacting (Yes/No)        | 4          | If yes, score as 4. If no, score as 0.   |               |                  | 0.0              |
| Natural drainages onto site (Yes/No)                   | 7*         | If yes, score as 7. If no, score as 0.   |               |                  | 0.0              |
| <i>*Select either structures or natural drainages.</i> |            |  |               |                  |                  |
| <b>MAX. POSSIBLE EROSION MATRIX SCORE:</b>             | <b>100</b> | <b>Total Score</b>   |               |                  | <b>42.8**</b>    |

\*\* Indicates BMPs in place. Erosion potential without BMPs may be greater.

REVISED PART B

**Los Alamos National Laboratory  
SURFACE WATER  
SITE ASSESSMENT**

Revised Part B. Please discard previous.

**SITE INFORMATION**

1a) PRS Number       1b) Structure Number       1c) FMU Number

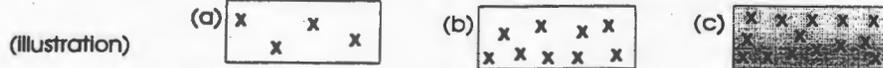
2. Date/Time (M/D/Y H:M am/pm)

**SITE SETTING (check all that apply)**

3.  On mesa top (a).       In the canyon floor, but not in an established channel (c)  
 Within a bench of a canyon (b).       Within established channel in the canyon floor (d).

**Explanation:** Construction debris surface disposal site consisting of asphalt, concrete, rebar and misc debris.

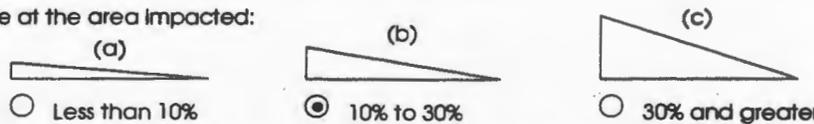
4. Estimated ground and/or canopy cover at site: (deciduous leaves, pine needles, rocks, vegetation, trees,



- Estimated % of ground/canopy cov       0% to 25%       25% to 75%       75% to 100%

**Explanation:** Site heavily covered with asphalt, pine needles, and pine tree canopy.

5. Steepest slope at the area impacted:



**Explanation:** Flat lying on top of mesa, but steepens quickly into tributary drainage channel.

**RUNOFF FACTORS**

Y / N

6. Is there visible evidence of runoff discharging from site? If yes, answer a) - c) below:  
  6a) Is runoff channelized? If yes, describe       Man-made channel.       Natural channel.

**Explanation:** Discharges from storm water culvert bisect PRS.

**RUNOFF FACTORS, CONT'D**

6b) Where does evidence of runoff terminate?

- Drainage or wetland (name)
- Within bench of canyon setting (name)
- Other (i.e., retention pond, meadow, mesa top)

**Explanation:** Runoff either infiltrates or collects in drainage channel which bisects PRS. Tributary channel connects directly with Two Mile Canyon.

Y / N

- 6c) Has runoff caused visible erosion at the site? If yes, explain below:  Sheet  Rill  Gully

**Explanation:** The gully/drainage channel formed from storm water culvert discharges through PRS has been hard armoured. Most of disposal site is un-affected by the channel and appears to be stable, sediment does not appear to be migrating within the channel.

**RUN-ON FACTORS**

Please rate the potential for storm water to run on to this site: (Check EITHER #7 or #9)

7. Are structures (i.e., buildings, roof drains, parking lots, storm drains) creating run-on to the site?

**Explanation:** Run-on from adjacent parking area and storage area to the south.

8. Are current operations (i.e., fire hydrants, NPDES outfalls) adversely impacting run-on to the site?

**Explanation:** No operational impacts.

9. Are natural drainage patterns directing stormwater onto site?

**Explanation:** Upslope drainage as described in number 7.

**ASSESSMENT FINDING:**

10. Based on the above criteria and the assessment of this site, does soil erosion potential exist? (REFER TO EROSION POTENTIAL MATRIX.)

Veenis, Steve

11. Signature of Water Quality/Hydrology Representative

SV Initials of independent reviewer.

Check here when information is entered in database:

This page is for ESH-18 notes, recommendations, and photos.

Y / N

12. a)   Is there visible trash/debris on the site?

b)   Is there visible trash/debris in a watercourse?

**Description of existing BMPs:**

Gabion lined channel.

Are BMPs being properly maintained? If no, describe in "Other Internal Notes."

Are BMPs effectively keeping sediment in place and reducing erosion potential?

**OTHER INTERNAL NOTES:**

Site originally scored 64.8 (2/3/99) due to visible gully erosion. The site was re-evaluated due to the installation of BMPs. Visible concrete and asphalt are adjacent to the channel, but appear to be providing protection against further erosion at site. The site has been inspected and maintained since gabion installation in 1999. The site is stable and will no longer be inspected.

**DOCUMENTATION SUPPORTING  
NFA FOR  
CONTRACTORS ROW  
73-005-99**

State of New Mexico  
ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau  
2044 A Galisteo, P.O. Box 26110  
Santa Fe, New Mexico 87502-6110

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GARY E. JOHNSON  
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PETER MAGGIORE  
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DEPUTY SECRETARY

1.4.2.6.1.4.1.4

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ER Project Office  
3-29-01*

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01 MAR 29 PM 12:35

March 28, 2001

Dr. John Browne, Director  
Los Alamos National Laboratory  
P. O. Box 1663, Mail Stop A100  
Los Alamos, New Mexico 87545

Mr. Theodore Taylor, Project Manager  
Department of Energy Los Alamos Area Office  
528 35<sup>th</sup> Street, Mail Stop A316  
Los Alamos, New Mexico 87544

RE: APPROVAL OF RFI REPORT FOR CONSOLIDATED PRS 73-005-99  
(CONTRACTORS ROW), LOS ALAMOS NATIONAL LABORATORY  
EPA ID # NM0890010515  
TASK NUMBER HWB-LANL-00-013

Dear Dr. Browne and Mr. Taylor:

The Hazardous Waste Bureau (HWB) of the New Mexico Environment Department (NMED) reviewed the Los Alamos National Laboratory's (LANL) document entitled RFI Report for Consolidated PRS 73-005-99 dated July 11, 2000 and referenced by ER2000-0238. HWB reviewed and approves the RFI Report for Consolidated PRS 73-005-99 (Contractors Row) referenced by ER2000-0238, and supporting documentation submitted to HWB on February 1, 2001.

If you have any questions or concerns regarding this approval, please contact me at (505) 827-1557 extension 1036 or Vickie Maranville at (505) 827-1557 extension 1044.

Sincerely,

John Young  
Corrective Action Project Leader  
Permits Management Program

*Originals -> Jelli  
Cc: Warren  
Jenny Root  
Saundra  
Linda Kamm  
RPF  
Michelle  
Jelli*