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

MAR 31 1993

Mr. Benito Garcia, Bureau Chief
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
525 Camino de los Marquez Place
Santa Fe, NM 87502

Dear Mr. Garcia:

Enclosed is a copy of the proposed modifications to the Los Alamos National Laboratory's (LANL) Hazardous Waste Permit (Permit Number NM0890010515-1). As per agreement with members of your staff, this document is submitted for review, and determination/concurrence of the classification of the modifications as proposed by LANL.

Upon completion of your Bureau's review, determination of classification, and subsequent notification of LANL of your findings, a formal request for modification will be submitted to your Bureau. This submittal will follow all of the requirements for permit modification specified in subsection 270.42 of the New Mexico Hazardous Waste Regulations.

Should your staff have any questions concerning this request for classification determination, please have them contact Jon Mack of my staff at 665-5026.

Sincerely,

Jerry L. Bellows
Area Manager

LESH:6JM-060

Enclosure

cc w/o enclosure:
J. Mack, ES&H, LAAO
T. Gunderson, EM-DO, LANL, MS-J591
K. Hargis, EM-8, LANL, MS-K490
T. Drypolcher, EM-7, LANL, MS-E517
J. White, EM-8, LANL, MS-K490
J. Ellvinger, EM-8, LANL, MS-K490

Rec. by C. J. Hurst 4-1-93

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PROPOSED MODIFICATIONS TO LOS ALAMOS NATIONAL LABORATORY RCRA OPERATING PERMIT

March 24, 1993

Los Alamos National Laboratory,
EM-8, Environmental Protection Group
Los Alamos, New Mexico

PROPOSED MODIFICATIONS TO LOS ALAMOS NATIONAL LABORATORY RCRA OPERATING PERMIT

March 24, 1993

Summary of Proposed Changes to
Los Alamos National Laboratory's
RCRA Operating permit

Permit Section	Proposed Modification Class	Appendix I Reference	Comment
Module I	1	A.1,2	Typographical errors and references to administrative and regulatory authorities are updated. Permit condition requested to standardize modifications required by personnel/organizational changes at the Laboratory.
Module II	1	A.1	Typographical errors and references to administrative and regulatory authorities are updated. Permit condition affecting transportation requirements updated to reflect compliance with DOT regulations for on-site transport.
Module III	1 2	A.1 F.1.b F.2.b	Typographical errors and references to administrative and regulatory authorities are updated. Modular storage units are added at TA-54, Area L, along with a cover over gas cylinder storage area.
Module IV	1	A.1,2 F.1.c	Typographical errors and references to administrative and regulatory authorities are updated. Permit conditions added affecting a truck-mounted-container treatment system for treating barium-contaminated sands.
Module V	1	A.1,2,3	Typographical errors and references to administrative and regulatory authorities are updated. Figure 8 is updated to reflect current configuration of the pollution control equipment.
Module VI	None		
Module VII	1	A.1	Typographical errors are corrected.
Attachment B	2	B.4	Inspection frequencies for several items are increased and the inspection protocol for the truck-mounted-container treatment system is added.
Attachment C	1	B.5.b	Structure and content of the Personnel Training Plan are modified to improve effectiveness and to reflect current practices and administrative requirements.
Attachment D	2	B.6.a-d	The Contingency Plan is modified to reflect updated emergency response procedures in accordance with Laboratory policy.

Summary of Proposed Changes to
Los Alamos National Laboratory's
RCRA operating permit
(Continued)

Permit Section	Proposed Modification Class	Appendix I Reference	Comment
Attachment E.2	1	A.1 D.1.c	Typographical errors are corrected and organizational references are updated. Date of closure is changed to reflect planned closure of the Batch Waste Treatment Unit.
Attachment E.10	1	A.1	Addition to Closure Plan attachment for the proposed Barium Sands Truck-Mounted-Container Treatment System.
Attachment F	1	A.1	Typographical errors are corrected, organizational references are updated, proposed new units are referenced, and current waste management practices are incorporated in the Container Management Plan.
Attachment G	1	A.1	Waste codes are added to include newly listed wastes and estimated annual quantities are changed to reflect current practice.
Attachment L	1	A.1	New attachment added to describe operations of the proposed Barium Sands Truck-Mounted-Container Treatment System.

RCRA Permit Modifications
Modules I Through VII

NOTES: The following proposed permit modifications are ordered according to Module. Preceding each Module that contains proposed modifications is a tabular summary of the modifications. The category of change noted in the summary tables refers to the following:

1. Global updates in Laboratory organizational structure or regulatory agency reference;

2. Typographical errors or clarifications in wording;

3. Regulatory changes that warrant modification of the permit;

4. Addition of permittable units at the Laboratory; and

5. Changes in procedures or technologies at the Laboratory that call for permit modification.

Proposed additions to the permit language are highlighted in the text with a shadowed background. Deletion of language is indicated with a strikeout feature. In several cases, Class 1 modifications submitted to the State by the Laboratory affect language in the permit. These changes are highlighted using the conventions identified above, but are in brackets.

LANL RCRA Permit Modification Sheet

Module Attachment	Page	Section	Category	Summary of Proposed Change	Modification Class	Class Citation
I	12	B.1	5	This permit condition is added to simplify minor administrative changes to the permit.	1	A.1
					1	A.2
I	15	D.9.b	2	"fgacility" to "facility"		
I	17	H.2	1	Change "Director of the Environmental Improvement Division" to "Secretary of the New Mexico Environment Department"	1	A.1
I	17	H.3	1	Change "Director of the Environmental Improvement Division" to "Secretary of the New Mexico Environment Department"	1	A.1
I	17	H.3	2	Change "herin" to "herein".	1	A.2
I	17	H.3	2	Change "this" to "his" (last sentence).	1	A.2
I	17	H.3.c	5	This change added to facilitate management of waste generated through remediation efforts at solid waste management units.	1	A.1

MODULE I STANDARD CONDITIONS

I.A. EFFECT OF PERMIT

The Permittee is allowed to incinerate, treat and store on site hazardous waste in accordance with the conditions of this permit. Any incineration, treatment or storage of hazardous waste not authorized in this permit or conducted under interim status, as defined by the Resource Conservation and Recovery Act (RCRA), is prohibited. Compliance with this permit constitutes compliance, for purposes of enforcement, with the New Mexico Hazardous Waste Act (Section 74-4-1 et seq. NMSA 1978) and the New Mexico Hazardous Waste Management Regulations (HWMR-5, as amended 1989), Parts V, VII and IX only for those management practices specifically authorized by this permit. The Permittee is also required to comply with HWMR-5, Parts I, II, III and IV to the extent the requirements of those Parts are applicable. The Permittee must also comply with all applicable self-implementing provisions imposed by the Resource Conservation and Recovery Act statute and/or the HWMR-5, Part VIII. A complete RCRA permit consists of this permit and a US EPA permit issued under the provisions of the Hazardous and Solid Waste Amendments of 1984 (HSWA) which addresses the portion of the RCRA program for which the State is not authorized. Issuance of this permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of State or local law or regulations. Compliance with the terms of this permit does not constitute a defense to any action brought under Sections 3008(a), 3008(h), 3013 or 7003 of RCRA; Sections 106(a), 104 or 107 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601 et seq., commonly known as CERCLA); Sections 74-4-1 et seq. NMSA 1978, or any other law governing protection of public health or the environment.

I.B. PERMIT ACTIONS

This permit may be modified, revoked and reissued, or terminated for cause as specified in HWMR-5, as amended 1989, Part IX, Subpart [~~D~~ B], included herein by reference. The filing of a request for a permit modification, revocation and reissuance, or termination, or the notification of planned changes or anticipated noncompliance on the part of the permittee, does not stay the applicability or enforceability of any permit condition. Review of any application for a permit renewal shall consider improvements in the state of control and measurement technology as well as changes in applicable regulations and laws.

1. The Permittee shall provide to the New Mexico Environment Department semiannual updates to identify changes in names, addresses, titles, or phone numbers of coordinators or other persons or agencies identified in Attachments to this Permit.

I.C. SEVERABILITY

The provisions of this permit are severable. If any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

I.D. DUTIES AND REQUIREMENTS

1. Duty to Comply. The Permittee shall comply, in accordance with HWMR-5, as amended 1989, Part IX, 40 CFR section 270.30(a), with all conditions of this permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit issued in accordance with HWMR-5, as amended 1989, Part IX, 40 CFR section 270.61. Any permit noncompliance by any Permittee employee or contractor, other than noncompliance authorized by an emergency permit, constitutes a violation of the New Mexico Hazardous Waste Act and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or denial of a permit renewal application.

2. Duty to Reapply. In accordance with HWMR-5, as amended 1989, Part IX, 40 CFR section 270.30(b), if the Permittee wishes to continue an activity allowed by this permit after the expiration date of this permit, the Permittee shall submit an administratively complete application for a new permit at least 180 calendar days before this permit expires. [HWMR-5, as amended 1989, Part [~~V~~ IX], 40 CFR section 270.10(h)]

3. Permit Expiration. Pursuant to HWMR-5 Part IX, 40 CFR 270.50, this permit shall be effective for the fixed term of ten years. As long as the state is the permit-issuing authority, this permit and all conditions herein will remain in effect beyond the permit's expiration date, if the Permittee has submitted a timely, complete application (see HWMR-5, Part IX, 40 CFR 270.10, 270.13 through 270.29) and, through no fault of the Permittee, the Director has not issued a new permit, as set forth in HWMR-5, Part IX, 40 CFR 270.51.

4. Need to Halt or Reduce Activity Not a Defense. In accordance with HWMR-5, as amended 1989, Part IX, 40 CFR section 270.30(c), it shall not be a defense for the Permittee, in an enforcement action, that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

5. Duty to Mitigate. In accordance with HWMR-5, as amended 1989, Part IX, 40 CFR section 270.30(d), the Permittee shall take all reasonable steps to minimize or correct any adverse impact on human health or the environment resulting from noncompliance with this permit.

6. Proper Operation and Maintenance. In accordance with HWMR-5, as amended 1989, Part IX, 40 CFR section 270.30(e), the Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control and related appurtenances which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance include effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facility or similar systems only when necessary to achieve compliance with the conditions of this permit.

7. Duty to Provide Information. In accordance with HWMR-5, as amended 1989, Part IX, 40 CFR section 270.30(h), the Permittee shall furnish to the Director, within

a reasonable time, any relevant information which he may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit. [HWMR-5, as amended 1989, Part V, 40 CFR section 264.74(a)]

8. Inspection and Entry. In accordance with HWMR-5, as amended 1989, Part IX, 40 CFR section 270.30(i), the Permittee shall allow the Director or any authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

   a. Enter at reasonable times upon the Permittee's premises where a regulated activity is located or conducted, or where records must be kept under the conditions of this permit;

   b. Have access to and copy, at reasonable times, any unclassified records that must be kept under the conditions of this permit;

   c. Inspect at reasonable times any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and,

   d. Sample or monitor, at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the New Mexico Hazardous Waste Act, any substances or parameters at any location.

   e. The Director recognizes that the Permittee operates in some cases under security restrictions imposed by the Atomic Energy Act (42 USC 2011 et seq.) and the regulations promulgated thereunder, and by other federal laws and regulations. Should conflict arise under this permit section, the Director and the Permittee shall cooperate in working with the appropriate Federal agency to obtain access approval. Nothing in this permit section shall be construed to deny access authorized by the Resource Conservation and Recovery Act.

9. Monitoring.

   a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the waste to be analyzed must be an accepted and appropriate method such as described in Test Methods for Evaluating Solid Waste: Physical/Chemical Methods SW-846, 1986, as revised, or an equivalent method. Laboratory analytical methods must be those specified in SW-846, 1986 as revised; Standard Methods for the Examination of Water and Wastewater, Fifteenth Edition, 1980 and 1981 Supplement, or current edition; or an equivalent method, as specified in the Waste Analysis Plan, Permit Attachment A.

   b. The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports and records required by this permit, the certification required by HWMR-5, as amended

1989, Part V, 40 CFR 264.73(b)(9), and records of all data used to complete the application for this permit for a period of at least 3 years from the date of the sample, measurement, report, record, certification, or application. These periods may be extended by request of the Director at any time and are automatically extended during the course of any unresolved enforcement action regarding this facility. The Permittee shall maintain records from all ground-water monitoring wells and associated ground-water surface elevations for the active life of the ~~fgacility~~ facility. [HWMR-5, as amended 1989, Part V, 40 CFR 264.74(b) and 270.30(j)(2)]

c. Pursuant to HWMR-5, Part IX, 40 CFR 270.30(j)(3), records of monitoring information shall specify:

i. The dates, exact place, and times of sampling or measurements;

ii. The individuals who performed the sampling or measurements;

iii. The dates analyses were performed;

iv. The individuals who performed the analyses;

v. The analytical techniques or methods used; and

vi. The results of such analyses.

10. Notice of Planned Physical Facility Changes. The Permittee shall give notice to the Director, as soon as possible, of any planned physical alterations or additions to the permitted facility which may impact any procedure or system of treatment, storage or control, or any related appurtenances, installed or used by the Permittee to achieve compliance with this permit. Physical alterations or additions shall include all hazardous waste activities and associated underground tanks. Construction of new units may not begin until a permit or permit modification has been issued.

11. Certification of Construction or Modification. The Permittee may not commence incineration, treatment or storage of waste at the modified unit until:

a. The Permittee has submitted to the Director, by certified mail or hand delivery, a letter signed by the Permittee and a registered professional engineer, stating that the unit has been constructed or modified in compliance with the permit; and

b. (i) The Director or his designee has inspected the modified or newly constructed unit and finds it is in compliance with the conditions of the permit; or

(ii) The Director, or his designee, has either waived the inspection or has not, within 15 calendar days, notified the Permittee of his intent to inspect.

12. Anticipated Noncompliance. The Permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in

noncompliance with permit requirements.

13. Transfer of Permit. This permit may be transferred to a new owner or operator pursuant to HWMR-5, as amended 1989, Part IX, 40 CFR section 270.40. Before transferring ownership or operation of the facility during its operating life, the Permittee shall notify the new owner or operator in writing of the requirements of HWMR-5, as amended 1989, Parts III, V and IX; and HSWA.

14. Compliance Schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 calendar days following each schedule date.

15. Other Information. Whenever the Permittee becomes aware that he failed to submit any relevant facts in the permit application, or submitted incorrect information in a permit application or in any report to the Director, the Permittee shall verbally notify the Director of such fact on the next work day and submit, within thirty calendar days, written correction of such facts or information. The term "Permit Application" includes any information submitted on solid waste management units.

I.E. SIGNATORY REQUIREMENTS

All reports or other information requested by the Director shall be signed and certified as required by HWMR-5, as amended 1989, Part IX, 40 CFR section 270.11.

I.F. CONFIDENTIAL INFORMATION

The Permittee may claim confidential, in accordance with HWMR-5, as amended 1989, Part IX, 40 CFR section 270.12 any information, required to be submitted by this permit.

I.G. DOCUMENTS TO BE MAINTAINED AT FACILITY

The Permittee shall maintain at the facility, until closure is completed and certified by an independent registered professional engineer, the following documents and amendments, revisions and modifications to these documents:

1. This permit and its attachments;

2. Waste Analysis Plan, as required by HWMR-5, as amended 1989, Part V,40 CFR section 264.13(b) and this permit;

3. Personnel training documents and records required by HWMR-5, as amended 1989, Part V, 40 CFR section 264.16(a) and this permit;

4. Contingency Plan, as required by HWMR-5, as amended 1989, Part V, 40 CFR section 264.53(a) and this permit;

5. Closure Plans required by HWMR-5, as amended 1989, Part V, 40 CFR section 264.112(a) and this permit;

6. Operating record required by HWMR-5, as amended 1989, Part V, 40 CFR section 264.73 and this permit; and

7. Inspection schedules required by HWMR-5, as amended 1989, Part V, 40 CFR section 264.15 and this permit.

/.H. PERMIT CONSTRUCTION

1. Citing. Whenever paragraphs of this permit or of the Hazardous Waste Management Regulations are cited, such cite includes all subordinate 40 CFR sections of the cited paragraph. When subordinate 40 CFR sections are cited, such cite includes all 40 CFR subsections of the cited subparagraph. All such cites shall be considered an inclusion by reference in accordance with HWMR-5, as amended 1989, Part IX, 40 CFR section 270.30.

2. Gender. Whenever the pronoun "he" is used in reference to the ~~Director of the Environmental Improvement Division~~ Secretary of the New Mexico Environment Department or the Permittee, it is to be read as "she," in any instance where the object of the reference is female.

3. Definitions. For purposes of this Permit, terms used ~~herin~~ herein shall have the same meaning as those in HWMR-5, Parts I, V, VIII, and IX, unless this permit specifically provides otherwise; where terms are not defined in the regulations or the permit, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term. "Regional Administrator" means the Regional Administrator of EPA Region VI, or his designee or authorized representative. "Director" means the ~~Director of the New Mexico Environmental Improvement Division~~ Secretary of the New Mexico Environment Department, or ~~this~~ his designee or authorized representative.

a. References to "Wastes" in this permit mean "Hazardous Wastes" as regulated under RCRA unless specifically designated otherwise at the time of use.

b. The term "Knowledge of Process" means a written description of the waste, certified as true and correct by an individual familiar with the process that generated the waste. Such description shall specify the waste constituents and estimate their concentration or quantity.

c. The term "On-site" as used in permit paragraph II.B.2. means facilities under the operational control of the Permittee and located within the external perimeter of the Permittee's property. This includes Technical Areas 0, 2, 3, 6, 8, 9, 11, 14, 15, 16, 18, 21, 22, 26, 33, 35, 36, 37, 39, 40, 41, 43, 46, 48, 49, 50, 51, 52, 53, 54, 55, 58, [~~and~~ 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, and 74. See permit Figure ~~1-1~~ 2] and Table I-1. Solid waste management units associated with Los Alamos National Laboratory undergoing remediation will also be considered "on-site" with regard to wastes generated through the remediation of these sites that are subject to management under the conditions set forth in this permit.

d. Technical Area Zero (TA-0), includes only the detached sites listed in Table I-1.

e. The term "Analysis" includes physical analysis, chemical analysis and knowledge of process determinations.

f. The term "Permittee" as used in this permit applies jointly and severably to the Owner, U. S. Department of Energy, and to the Operator, the University of California Regents, doing business as the Los Alamos National Laboratory.

LANL RCRA Permit Modification Sheet

Module Attachment	Page	Section	Category	Summary of Proposed Change	Modification Class	Class Citation
II	19	B.2	1	Change "onsite" to "on-site."	1	A.1
II	19	B.2	5	This change added to facilitate management of waste generated through remediation efforts at solid waste management units.	1	A.1
II	24	K.2.b	1	NMED 24-hour emergency phone number has changed. Change "827-2929" to "827-4358."	1	A.1
II	24	K.2.c	1	Change "EID Director" to "Secretary, New Mexico Environment Department."	1	A.1
II	25	M	5	This permit condition should be modified. DOE/LANL currently complies with DOT regulations for on-site transport of hazardous waste. These regulations are highly protective of human health and the environment, negating the need for permit conditions on transport.	1	A.1
II		Figure 10	1	Update Figure 10 to reflect new regulatory title and address.	1	A.1

MODULE II GENERAL FACILITY CONDITIONS

II.A. DESIGN AND OPERATION OF THE FACILITY

The Permittee shall maintain and operate the facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release to air, soil, or surface water of hazardous waste constituents which could threaten human health or the environment.

II.B. REQUIRED NOTICE

1. Foreign Wastes. This permit does not allow the Permittee to accept wastes from a foreign source. If the Permittee is to receive hazardous waste from a foreign source, he shall apply for and receive a permit modification in accordance with HWMR-5, as amended 1989, Part IX, 40 CFR section 270.41 or 270.42, if appropriate, prior to accepting such waste.

2. Off-Site Wastes. This permit does not allow the Permittee to accept wastes from an off-site source. "Off-site source" refers to wastes generated by sources other than the Permittee or its contractor(s) operating ~~onsite~~ on-site. For the purposes of this permit, wastes generated by the Permittee at Technical Area 57, the Fenton Hill site, and wastes generated through the remediation of solid waste management units associated with Los Alamos National Laboratory, may be accepted for storage or treatment if all such waste is properly manifested in accordance with permit paragraph II.J. below. If the Permittee is to receive hazardous waste from an off-site source, he shall apply for and receive a permit modification in accordance with HWMR-5, as amended 1989, Part IX, 40 CFR section 270.41 or 270.42, if appropriate, prior to accepting such waste.

II.C. WASTE ANALYSIS

1. Waste Analysis Plan. The Permittee shall follow the procedures described in Permit Attachment A.

2. Quality Assurance. The Permittee shall verify its waste analysis as part of a written quality assurance program. The quality assurance program shall be in accordance with current accepted practices such as specified in Test Methods for Evaluating Solid Waste: Physical/Chemical Methods SW-846, 1986, as revised, or equivalent methods approved by the Director; and at a minimum ensure that the Permittee maintains proper functional instruments, uses approved sampling and analytical methods, verifies the validity of sampling and analytical procedures, and performs correct calculations. The Permittee will notify any contract laboratory of the requirements of this section and permit.

3. Waste Segregation. The Permittee shall keep available at each place where waste storage for more than ninety days occurs, a copy of EPA-600/2-80-076, *A Method of Determining the Compatibility of Hazardous Waste*.

4. Annual Verification. The Permittee shall annually, by the anniversary date of each quarterly report, verify the accuracy and currency of the waste stream determination made in Permit Attachment I.

//.D. SECURITY

The Permittee shall comply with the security provisions of HWMR-5, as amended 1989, Part V, 40 CFR section 264.14.

//.E. INSPECTION REQUIREMENTS

1. Inspection Plan. The Permittee shall follow Permit Attachment B. and the inspection requirements in Modules III through VII. The Permittee shall remedy any deterioration or malfunction of equipment or structure discovered by an inspection as required by HWMR-5, as amended 1989, Part V, 40 CFR section 264.15(c). Inspection logsheets may be revised by the Permittee and submitted to the Director for inclusion in this permit by permit modification in accordance with HWMR-5, as amended 1989, Part IX, 40 CFR section 270.42

2. Facility Release Inspection.

   a. The Permittee shall take surface water samples and analyze for metals, volatile and both acid- and base-neutral semivolatile organic hazardous waste constituents in accordance with Table II-2 annually at the sample locations in Table II-1. See Figure 9.

   b. The sampling and analysis shall be done using EPA-approved procedures as published in the latest issue of SW-846.

   c. Analysis of Variance (ANOVA) statistical procedures as promulgated in 53 FR 39720 (October 11, 1988) shall be used to compare data between up-gradient and down-gradient stations.

   d. Records of this inspection shall be kept in accordance with permit paragraph II.K.1.a. below. All analytical results will be recorded and reported. Reports shall be on the form provided in Figure 10.

   e. Reports of releases detected by this inspection shall be made in accordance with permit paragraph II.K.2.c. below.

   f. In the event water samples cannot be obtained at one or more sites, the attempt to obtain samples will be documented in the facility record and the Director notified in writing within 30 days of each unsuccessful attempt.

//.F. PERSONNEL TRAINING

The Permittee shall conduct personnel training as required by HWMR-5, as amended 1989, Part V, 40 CFR section 264.16. This training program shall follow Permit Attachment C. Permit Attachment C. shall be updated by the Permittee whenever necessary so as to remain current and accurate. A dated copy of the revised training program will be submitted to the Director for the permit files and permit modification in accordance with HWMR-5, as amended 1989, Part IX, 40 CFR section 270.42 prior to its implementation. The Permittee shall maintain training documents and records, as required by HWMR-5, as amended 1989, Part V, 40 CFR section 264.16(d) and (e).

//.G. REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE

The Permittee shall comply with the requirements of HWMR-5, as amended 1989, Part V, 40 CFR section 264.17.

//.H. PREPAREDNESS AND PREVENTION

1. Required Equipment. At a minimum, the Permittee shall equip the facility with the equipment set forth in Permit Attachments B. and D.

2. Testing and Maintenance of Equipment. The Permittee shall test and maintain the equipment specified in permit paragraph II.H.1. above annually or more often if necessary to assure its proper operation in time of emergency.

3. Access to Communications or Alarm System. The Permittee shall maintain access to the communications or alarm system(s) as required by HWMR-5, as amended 1989, Part V, 40 CFR section 264.34.

4. Required Aisle Space. The Permittee shall maintain aisle space as required by HWMR-5, as amended 1989, Part V, 40 CFR section 264.35. The minimum aisle shall be twenty four inches. All containers in storage shall be accessible for inspection.

//.I. CONTINGENCY PLAN

1. Implementation of Plan. The Permittee shall immediately carry out the provisions of Permit Attachment D. whenever there is an unplanned fire, explosion, or unpermitted release of hazardous waste or hazardous constituents which threatens or could threaten human health or the environment.

2. Amendment of the Plan. The Permittee shall review, as required by HWMR-5, as amended 1989, Part V, 40 CFR section 264.54., and immediately amend if necessary, the Contingency Plan.

3. Copies of the Plan. The Permittee shall comply with the requirements of HWMR-5, as amended 1989, Part V, 40 CFR section 264.53. A dated copy of any amended Contingency Plan will be submitted to the Director for the permit files and permit modification in accordance with HWMR-5, as amended 1989, Part IX, 40 CFR section 270.42 prior to its implementation.

4. Emergency Coordinator. The Permittee shall comply with the requirements of HWMR-5, as amended 1989, Part V, 40 CFR section 264.55 concerning the emergency coordinator.

//.J. MANIFEST SYSTEM

The Permittee shall comply with the manifest requirements of HWMR-5, as amended 1989, Part V, 40 CFR sections 264.71 and 264.72 for any hazardous wastes received from or shipped off-site by the Permittee for treatment, storage or disposal.

II.K. RECORDKEEPING AND REPORTING

1. Facility Operating Record. The Facility Operating Record maintained pursuant to HWMR-5, as amended 1989, Part V, 40 CFR section 264.73 shall be maintained in such manner that any information required to be in the record shall be readily available to an inspector. Readily available means that, upon request by an inspector, the Permittee can provide the requested information within 24 hours or before the end of the inspection, whichever is less; or upon a schedule designated by the inspector.

   a. In accordance with HWMR-5, as amended 1989, Part IX, 40 CFR section 270.30(j), the Permittee shall maintain at the facility until the end of the last closure period, a written record of waste, effluent, water and decontamination wash-water analyses. The following information shall be recorded:

      (i) The dates, exact place, and times of sampling or measurements;

      (ii) The individual who performed the sampling or measurements;

      (iii) The dates analyses were performed;

      (iv) The individuals or off-site laboratory who performed the analyses;

      (v) The analytical techniques or methods used; and

      (vi) The results of such analyses. The results shall include range, mean, standard deviation and detection limits as applicable to facilitate data analysis.

   b. The Permittee shall maintain pursuant to HWMR-5, as amended 1989, Part V, 40 CFR section 264.73(b) at the facility until the end of the last closure period, a written record of waste disposal activities. Current EPA approved nomenclature and codes shall be used where appropriate. The following information shall be recorded:

      (i) Waste Source

      (ii) Waste Description

      (iii) Waste Quantity

      (iv) Current Storage Location

      (v) Disposal. Properly completed hazardous waste manifests will suffice for wastes shipped off-site.

   c. The Permittee shall maintain at the facility a written record of Contingency Plan implementation reports. The record shall contain at least the information required in permit paragraph II K.2.b. below. These records shall be kept until the end of the last closure period.

d. The Permittee shall keep at the facility a written record of all inspections conducted in accordance with Permit Attachment B. and permit paragraph II.E. above. These records shall be maintained for a minimum period of three years from the date of the inspection. Records of inspections leading to corrective action shall be retained for three years after the corrective action taken as a result of the inspection.

e. The Permittee shall keep at the facility training documents and records as required by HWMR-5, as amended 1989, Part V, 40 CFR sections 264.16(d) and 264.16(e), and Permit Attachment C. Records of training shall be kept on all current employees and for three years after an employee leaves the facility owner's or operator's employ.

f. The Permittee shall maintain at the facility a copy of all biennial reports submitted in accordance with permit paragraph II.K.2. below. These copies shall be kept until the end of the last closure period.

g. The Permittee shall keep sufficient monitoring records and documentation to demonstrate compliance with this permit. Records unique to one activity may be kept in the vicinity of that activity, subject to the availability requirement in permit paragraph II.K.1. above.

h. In accordance with HWMR-5, as amended 1989, part V, 40 CFR section 264.74(b), the retention period for all records required by this permit is extended automatically during the course of any unresolved enforcement action regarding the facility, or as directed by the Director.

2. Reports.

a. The Permittee shall comply with the Biennial Report requirements of HWMR-5, as amended 1989, Part V, 40 CFR section 264.75.

b. In accordance with HWMR-5, as amended 1989, Part IX, 40 CFR section 270.30(l)(6), the Permittee shall report to the Director any noncompliance with the permit which may endanger human health or the environment. Any such information shall be reported orally within 24 hours from the time the Permittee becomes aware of the circumstances. This report shall include the following:

(i). Information concerning the release of any hazardous waste which may endanger public or private drinking water supplies.

(ii) Information concerning the release or discharge of any hazardous waste, or of a fire or explosion at the facility, which could threaten the environment or human health. The description of the occurrence and its cause shall include:

(a) Name, address, and telephone number of the owner or operator;

(b) Name, address, and telephone number of the facility;

(c) Date, time, and type of incident;

(d) Name and quantity of materials involved;

(e) The extent of injuries, if any;

(f) An assessment of actual or potential hazard to the environment and human health outside the facility, where this is applicable; and

(g) Estimated quantity and disposition of recovered material that resulted from the incident.

The 24-hour report shall be made by calling (505) 827-~~2929~~ 4358 during normal duty hours or (505) 827-9329, the 24-hour emergency line.

c. The Permittee shall provide to the Director within five (5) working days of the time the Permittee becomes aware of the circumstances, a written report on the event(s) reported orally in permit paragraph II.K.2.b. above. The written submission shall contain a description of the noncompliance and its cause; the periods of noncompliance, including exact dates and times; whether the noncompliance has been corrected; and if not, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Permittee need not comply with the five-day written notice requirement if the Director waives the requirement and the Permittee submits a written report within fifteen (15) calendar days of the time the Permittee becomes aware of the circumstances. The written report shall be submitted by certified mail to:

~~EID Director~~
Secretary,
New Mexico Environment Department
1190 St. Francis Drive
Harold Runnels Building
Santa Fe, NM 87503

d. In accordance with HWMR-5, as amended 1989, Part IX, 40 CFR section 270.30(l)(10), the Permittee shall report all other instances of noncompliance, not otherwise required to be reported above, in the annual Environmental Surveillance Report. The reports shall contain the information listed in permit paragraph II.K.2.b. above.

II.L. CLOSURE

The provisions of this permit section apply to individual units for partial closure of the facility, as well as total closure of the entire facility. Closure of one unit may or may not affect the remaining units. The impact of such sequential or partial closure may depend on the sequence and circumstances in existence at the time of closure. The Director may direct or the Permittee may request appropriate revisions to the closure plan at that time.

1. Performance Standard. The Permittee shall close the facility as required by HWMR-5, as amended 1989, Part V, 40 CFR section 264.111 and in accordance with each closure plan, Permit Attachment E.

2. Amendment of Closure Plans. The Permittee shall amend each closure plan in accordance with HWMR-5 as amended 1989, Part V, 40 CFR section 264.112(c) whenever necessary.

3. Notification of Closure. The Permittee shall notify the Director at least 60 days prior to the date he expects to begin closure under any Permit Attachment E. closure plan.

4. Time Allowed For Closure. After receiving the final volume of hazardous waste, the Permittee shall treat or remove from site all hazardous waste in accordance with the schedule specified in the closure plan. After receiving the final volume of hazardous waste, the Permittee shall complete closure activities in accordance with the schedule specified in the closure plan.

5. Disposal or Decontamination of Equipment. The Permittee shall properly dispose of or decontaminate all facility equipment, structures, and soils, as required by the closure plan.

6. Certification of Closure. The Permittee shall certify that the facility has been closed in accordance with the specifications in the closure plan.

//.M. MOVEMENT RESTRICTION

~~Hazardous wastes in quantities per vehicle in excess of 110 gallons shall not be transported by the Permittee to, from, or within the facility over public roads between the hours of 7:00 AM to 8:30 AM, 11:30 AM to 1:30 PM or 4:00 PM to 5:45 PM on normal duty days. Off-site transportation under U.S. Department of Transportation regulations by EPA registered transporters is not subject to this restriction. On-site transportation of wastes generated as a result of an emergency cleanup in accordance with Permit Attachment D are not subject to this restriction.~~

On-site tranportation of hazardous wastes shall at all times be conducted in accordance with U.S. Department of Transportation regulations. Off-site transportation of hazardous wastes shall be conducted by EPA-registered transporters only and shall also be in accordance with U.S. Department of Transportation regulations.

//.N. Spills

The Permittee shall take corrective action, as required by Section 74-4-4.2B NMSA 1978, (as amended 1989), for all releases of hazardous wastes or constituents from any solid waste management unit at his facility. Corrective action may include, but shall not be limited to, the following: decontamination and/or removal of all releases, spills and leaks; immediate cleanup of release or spillage of hazardous wastes, or constituent residue or listed chemicals which become wastes; prevention of surface-water or ground-water contamination which could result from a release or spill; and, cleanup of any surface-water or ground-water contamination which results from a release or spill.

LANL RCRA Permit Modification Sheet

Module Attachment	Page	Section	Category	Summary of Proposed Change	Modification Class	Class Citation
III		Figure 6	1	Update Figure 6 to include new location of Modular units plus new Modular units.	1	A.1
III	26	A.1.d	5	Add, after "Gas cylinders will be stored in cylinder racks", the following: ", or on specially constructed pallets that provide support and restraint under a self-supporting canopy located...".	1	F.2.b
III	26	A.1.d	5	Delete "or fastened to the perimeter fence," and ", so that the fence acts as the cylinder support and restraint...".	1	A.2
III	26	A.1.f	2	Add "or equivalent" to sentence.	1	A.3
III	26	A.1.f	4	Add Building 54-70 plus three new modular buildings for container storage. This addition improves ability to inspect and segregate wastes.	2	F.1.b
III	27	A.2.d	2	Add "or equivalent" to sentence.	1	A.3
III	27	B.3.b	2	Change "accumlation" to accumulation."	1	A.3
III	27	B.3.c	2	Correct spelling of "prohibitation" to "prohibition" in 1st and 2nd sentences of this paragraph.	1	A.3

MODULE III STORAGE IN CONTAINERS

III.A. DESIGNATED STORAGE UNITS

1. Technical Area 54, Area L. The Permittee may store for more than ninety days hazardous wastes in containers only in the following designated storage areas:

   a. Containers containing free liquids may be stored on the concrete containment structure, Facility Number 54-32.

   b. Containers containing free liquids may be stored in the packaging building, Facility Number 54-31.

   c. Containers not containing free liquids may be stored, on pallets or otherwise elevated four inches, in a single layer in cleared areas within the fenced portion of Area L, subject to the limitations of HWMR-5, as amended 1989, Part V, 40 CFR sections 264.175(c) and 264.175(d). Such containers shall not be stored within five feet of the perimeter fence, nor five feet of any structure, nor five feet of the paved or unpaved roadway. Disposal unit covers designed to serve as storage areas are not subject to this exclusion. See Figure 6.

   d. Gas cylinders will be stored in cylinder racks, or on specially constructed pallets that provide support and restraint, under a self-supporting canopy located in cleared areas within the fenced portion of Area L ~~or fastened to the perimeter fence,~~ within the restrictions of permit paragraph II.G. above; ~~, so that the fence acts as the cylinder support and restraint.~~

   e. The fenceline around Area L as shown in permit Figure 6 shall not be altered without prior notice to the Director and permit modification in accordance with HWMR-5, as amended 1989, Part IX, 40 CFR section 270.41 or 270.42 as appropriate.

   f. Containers containing free liquids may be stored in the modular storage buildings, Model 22 or equivalent, Facility Numbers 54-68; ~~and~~ 54-69, 54-70, and three additional unnumbered Model 22 or equivalent modular storage buildings located as shown in Figure 6.

2. Technical Area 50. The Permittee may store for more than ninety days hazardous wastes in containers only in the following designated storage areas:

   a. Containers may be stored within the curbed bay of the Batch Waste Treatment Unit in Building 50-1.

   b. Containers containing free liquids may be stored on the concrete containment structures, Facility Numbers 50-139 and 50-140, located as shown in Figure 4.

   c. Building 50-37. Containers may be stored within storage room 117 of the Controlled Air incinerator as shown in Figure 4.

   d. Containers containing free liquids may be stored in the modular storage buildings,

Model 22, or equivalent, Facility Numbers 50-114, 50-137 and 50-138, located as shown in Figure III-2.

III.B. AUTHORIZED WASTES

1. Identification. Only hazardous wastes identified in Permit Attachment G. with the process code "S01" in column D.1. "Processes" shall be stored.

2. Quantities. The cumulative quantity of individual hazardous wastes in storage at any one time at the facility shall not exceed the quantity indicated in Permit Attachment G. Column B. "Estimated Annual Quantity of Waste".

3. Land Ban. The Permittee must also comply with the following regarding storage of its wastes in containers which are prohibited from land disposal. These restrictions are imposed on any waste as it becomes prohibited from land disposal. (HWMR-5, as amended 1989, Part VIII, 40 CFR section 268.50)

   a. A storage period of one year is permitted. A storage period beyond one year is permitted provided there is proof that such storage is solely for the purpose of accumulation of such quantities as are necessary to facilitate proper recovery, treatment or disposal.

   b. Each container must be clearly marked as to its contents and the date each period of ~~accumlation~~ accumulation begins.

   c. Hazardous wastes meeting the treatment standards in HWMR-5, Part VIII, 40 CFR sections 268.41, 268.42, 268.43 are not subject to the storage ~~prohibitation~~ prohibition. Hazardous wastes meeting the treatment standards specified under the variance in HWMR-5, Part VIII, 40 CFR section 268.44 are not subject to the storage ~~prohibitation~~ prohibition.

III.C. CONTAINERS

1. Capacity.

   a. Labpacked wastes shall be stored in containers not to exceed 55-gallon nominal capacity.

   b. Bulk liquids may be stored in drums of a nominal capacity of 55-gallons or less.

   c. Solidified hazardous wastes not containing free liquids may be stored in containers meeting U.S. Department of Transportation (DOT) requirements for transportation.

   d. Compressed gases may be stored in any sized cylinder. Small cylinders may be packed in drums or crates complying with DOT shipping regulations.

   e. Polyethylene containers of 220-gallon or 330-gallon capacity may be used in place of 55-gallon drums as long as secondary containment capacity criteria of HWMR-5, as amended 1989, Part V, 40 CFR section 264.175(b)(3) are not exceeded.

2. Type. Containers must be of a type specified in the DOT hazardous materials regulations, 49 CFR 171 to 179, if those regulations specify a particular container for the waste. As applicable, the containers shall be either: (1) previously unused or certified reconditioned DOT shipping containers; (2) the original shipping containers in which the material was first marketed; or (3) any other suitable container which satisfies the requirements of permit paragraph III.C. If the hazardous wastes are to be received and stored in their original shipping containers, the Permittee must insure that the requirements of permit paragraph III.C. are satisfied. Polyethylene bulk containers shall meet or exceed DOT specification number E9052. Compressed gas cylinders not meeting DOT requirements shall be segregated in a safe area.

3. Quantity. The following quantities include all stored liquid materials, whether regulated or not. Solid materials which do not displace containment capacity may be collocated without affecting these volumes. Solid materials which displace containment volume shall be included in calculating the stored volume as if they were liquids. The Permittee shall keep current accurate records of the quantity of waste in storage at each location below to ensure that these capacities are not exceeded.

   a. No more than 220 gallons of liquid shall be stored at Technical Area 50, Building 50-1, BWTU curbed bay.

   b. No more than 440 gallons of liquid shall be stored at Technical Area 54, Area L, Building Number 54-31.

   c. No more than [~~seventeen 2,220~~ 17,220] gallons of liquid shall be stored at each concrete containment structure: Facility Numbers 54-32, 50-139 or 50-140.

   d. No more than 3600 containers of 55-gallon capacity or less, or the equivalent volume of 26,470 cubic feet, 980 cubic yards or 749 cubic meters, shall be used to store solidified wastes at Technical Area 54, Area L.

   e. No more than 3,630 gallons of liquid shall be stored in Building 50-37, Room 117.

   f. No more than 1,650 [~~fifty~~] gallons of waste shall be stored in each modular storage unit.

4. Condition.

   a. If a container holding hazardous waste is not in good condition (e.g. severe rusting, structural defects) or if it begins to leak, the Permittee shall transfer the hazardous waste from such container to a container that is in good condition or otherwise manage the waste in compliance with the conditions of this permit.

   b. The Permittee may use overpack containers of more than 55-gallon capacity to manage defective waste storage containers. Each overpacked container shall be recorded in the facility record.

5. Compatibility of Waste with Containers.

   a. The Permittee shall assure, as required by HWMR-5, as amended 1989, Part V, 40 CFR section 264.172, that the ability of the container to contain the waste is not impaired. When necessary, this shall include procedures for determining whether the hazardous waste is no longer compatible with the shipping container if it is to be stored in its original container (e.g. determination of container adequacy for chemicals that have a finite shelf life or may change in composition upon aging).

   b. The Permittee shall not place into the polyethylene containers described in permit paragraph III.C.1.e. above, any material for which the manufacturer does not rate the container suitability as "Good" or "Excellent" in the current compatibility technical bulletin issued by the manufacturer. A copy of the current bulletin shall be available at any location where the polyethylene container(s) is (are) filled or stored with contained wastes for more than thirty days.

6. Management. The Permittee shall manage containers as required by HWMR-5, as amended 1989, Part V, 40 CFR section 264.173 and Permit Attachment F.

III.D. CONTAINMENT

The Permittee shall construct and maintain the containment systems for each storage unit in permit paragraphs III.A.1. and III.A.2. above in accordance with the requirements of HWMR-5, as amended 1989, Part V, 40 CFR section 264.175.

III.E. IGNITABLE OR REACTIVE WASTES

The Permittee shall not locate containers holding ignitable or reactive waste within 15 meters (50 feet) of the facility property line.

III.F. INCOMPATIBLE WASTES

The Permittee shall manage incompatible wastes or incompatible wastes and materials in accordance with the requirements of HWMR-5, as amended 1989, Part V, 40 CFR section 264.177.

III.G. CLOSURE

The Permittee shall comply with the Closure Plan, Permit Attachment E. and permit paragraph II.L. above, for closure of any permitted storage area.

III.H. INSPECTION

1. Inspection Plan. The Permittee shall inspect the storage areas in accordance with Permit Attachment B.

2. Spill Kits. The type, presence, location and quantity of spill kits shall be verified and annotated monthly. If spill kits are locked up, the location of access keys shall be verified.

3. Warning Signs. The legibility and condition of warning signs shall be included in the weekly inspection. Missing or illegible signs shall be promptly replaced within 24 hours of discovery.

   a. Signs shall be at the entrances to the hazardous waste units. Collocated units may be included within one signed area.

   b. Signs shall say "Danger, Unauthorized Personnel Keep Out" and "Hazardous Waste Storage Area".

   c. Signs shall be in both English and Spanish.

   d. Signs on approachable perimeter fences shall be spaced no more than 50 feet apart.

LANL RCRA Permit Modification Sheet

Module Attachment	Page	Section	Category	Summary of Proposed Change	Modification Class	Class Citation
IV	31	Title	2	Change title from "MODULE IV TREATMENT IN TANKS" to "MODULE IV TREATMENT IN CONTAINERS AND TANKS."	1	A.1
IV	31	A	4	Add "containers and" to first sentence.	1	A.1
IV	31	A.2	3	Change "four" to "two" open-top steel tanks.	1	A.1
IV	31	A.2	4	Add "or in the Barium Sand Truck-Mounted-Container Treatment System located during operation on the treatment pad at Building 54-35."	1	A.1
IV	31	B.5.b	2	Replace section with "Each container or tank must be clearly marked as to its contents, the quantity of hazardous waste received, and the date each period of accumulation begins." This text is based on 40 CFR § 268.50(a)(2)(ii).	1	F.1.c
IV	32	B.5.c	2	Change "tothe storage prohibitation" to "to the storage prohibition."	1	A.2
IV	32	C	2	Add "Treatment containers or" to the title.	1	A.1
IV	33	C.3	5	A Barium Sands Truck-Mounted-Container Treatment System will replace two existing treatment tanks used for treating barium-contaminated sands (Closure of the two treatment tanks is planned for 1993). Operation of this unit will enhance worker health and safety. The Barium Sands Truck-Mounted-Container Treatment System will be constructed and operated in accordance with all applicable conditions of this Permit.	1	F.1.c
IV	33	D.3	5	The Barium Sands Truck-Mounted-Container Treatment System will be operated in accordance with operating procedures described in Attachment L.	1	F.1.c
IV	34	E.3	5	Procedures to prevent hazards and requisite proposed inspection and reporting requirements for the Barium Sands Truck-Mounted-Container Treatment system are identifed.	1	F.1.c

LANL RCRA Permit Modification Sheet

Module Attachment	Page	Section	Category	Summary of Proposed Change	Modification Class	Class Citation
IV	36	H.3	5	Closure requirements for the Barium Sands Truck-Mounted-Container Treatment System are identifed.	1	F.1.c

MODULE IV TREATMENT IN CONTAINERS AND TANKS

IV.A. DESIGNATED TREATMENT UNITS

The Permittee may treat hazardous wastes only in the containers and tanks described in this module. No other treatment of hazardous wastes, EPA code T01, is permitted anywhere on the facility. Treatment of wastes subject to the exclusions of HWMR-5, as amended 1989, Part V, 40 CFR section 264.1(g) shall be documented in accordance with Permit Attachment I. A record or listing of all facility treatment units shall be kept by the Permittee. Their regulatory status and the reasons for claiming an exclusion under HWMR-5, as amended 1989, Part V, 40 CFR section 264.1(g) shall be recorded. Laboratory staff neutralizing characteristic wastes in quantities of less than one liter need not be recorded if the resultant discharge is to a wastewater system subject to other regulation.

1. Batch Waste Treatment Unit. Wastes may be treated in the Batch Waste Treatment Unit (BWTU) located in the basement of Building 50-1 in Technical Area 50.

2. Technical Area 54 Area L. Wastes may be treated in the ~~four~~ two open-top steel tanks located in Area L, or in the Barium Sand Truck-Mounted-Container Treatment System located during operation on the treatment pad at TA 54-35.

IV.B. AUTHORIZED WASTES

1. Identification. Only wastes identified in Permit Attachment G. with the process code "T01," in Column D.1. "Processes" shall be treated, subject to the limitations in permit paragraph IV.B.4. below.

2. Quantities. The quantity of waste awaiting treatment shall not exceed the quantity indicated in Permit Attachment G. Column B. "Estimated Annual Quantity of Waste".

3. Additions to the List of Treated Wastes. The Permittee shall apply for a permit modification in accordance with HWMR-5, as amended 1989, Part IX, 40 CFR sections 270.41 or 270.42 before treating wastes not identified in this permit module.

4. Special Limitation. The limitations in Permit Attachment G, Column D.2. shall apply to choice of treatment unit.

5. Land Ban. The Permittee must also comply with the following regarding storage of its wastes in tanks which are prohibited from land disposal. These restrictions are imposed on any waste as it becomes prohibited from land disposal. (HWMR-5, as amended 1989, Part VIII, 40 CFR section 268.50)

   a. A storage period of one year is permitted. A storage period beyond one year is permitted provided there is proof that such storage is solely for the purpose of accumulation of such quantities as are necessary to facilitate proper recovery, treatment or disposal.

   b. Each container or tank must be clearly marked as to its contents, the quantity of hazardous waste received, and the date each period of accumulation begins.

c. Hazardous wastes meeting the treatment standards in HWMR-5, as amended 1989, Part VIII, 40 CFR sections 268.41 268.42, 268.43 are not subject to the storage prohibition. Hazardous wastes meeting the treatment standards specified under the variance in HWMR-5, Part VIII, 40 CFR section 268.44 are not subject ~~tothe~~ to the storage ~~prohibitation~~ prohibition.

IV.C. DESIGN OF TREATMENT CONTAINERS OR TANKS

1. Batch Waste Treatment Unit. The tank shall be a totally enclosed vented 500 gallon Kynar (c) lined pressure vessel. The tank shall be over a curbed containment slab with eight inch curbs and constructed crack-free of concrete with epoxy coating.

2. Technical Area 54, Area L Treatment Tanks. The tanks shall be nine feet in diameter and three feet six inches high. They shall be constructed of ten gauge carbon steel and shall be coated inside and out with Carboline Phenoline (@) film or equivalent. The tanks shall be on a containment slab constructed with six inch retaining curbs as in Figure 7.

3. Barium Sand Truck-Mounted-Container Treatment System. The Barium Sand Truck-Mounted-Container Treatment System shall be constructed as shown in Figure 11. When in operation, the truck mounted system shall be placed on the treatment pad providing secondary containment in TA 54-35, in place of two of the present treatment tanks shown in Figure 7.

IV.D. OPERATING REQUIREMENTS

1. Batch Waste Treatment Unit. The Batch Waste Treatment Unit shall be operated in accordance with Permit Attachment H and the requirements of this module.

   a. The process monitoring instrumentation will be checked for proper operation before treatment begins. No treatment will be started if monitoring instruments are not functioning properly.

   b. Wastes will be sampled before and after treatment and analyzed in accordance with Permit Attachment A.

   c. No more than 400 gallons of waste plus reagents shall be treated at one time. The wastes shall be limited to the appropriate quantity based on the results of the analyses and the estimated quantity of reagent required to treat the waste.

   d. Residues from treatment of wastes listed in HWMR-5, as amended 1989, Part II, 40 CFR section 261, Subpart D, shall be properly disposed of as a hazardous waste in accordance with applicable regulations. Waste treatment residues determined in accordance with Permit Attachment A to qualify for exclusion may be discharged to the industrial wastewater system.

   e. The process tank and associated plumbing will be cleaned before and after treatment operations. Operations consisting of several treatment batches of compatible wastes do not require cleaning between batches. The tank and plumbing will be cleaned at the end of the operation, or if the treatment unit is to be left unmanned, such as the end of a shift with no following manned shift.

2. Technical Area 54, Area L.

   a. The tanks shall maintain a minimum of six inches of freeboard at all times. The tanks shall not be left unattended when filling or addition of any material is in process.

   b. Wastes in the tanks will be sampled before and after treatment and analyzed in accordance with Permit Attachment A.

   c. Tanks containing hazardous wastes will be covered whenever significant precipitation is imminent or falling. Significant precipitation is one-half inch water equivalent.

   d. Incompatible wastes shall not be treated in the tanks.

3. Barium Sand Truck-Mounted-Container Treatment System.

   a. The Truck-Mounted-Container Treatment System shall be operated in accordance with the operating procedures described in Attachment L.

   b. Only barium-contaminated sands (D005) shall be treated in this container-treatment system.

   c. Each treatment operation will consist of no more than the equivalent of five 55 gallon drums (275 gallons) of barium-contaminated sands, not including water, sulfuric acid, gypsum, and cement added as part of the treatement operation.

   d. Precautions outlined in Attachment L to capture and recycle fugitive dust must be in place during operation of the container-treatment system.

IV.E. INSPECTIONS

The Permittee shall inspect the treatment tanks in accordance with Permit Attachment B. and the requirements below.

1. Batch Waste Treatment Unit.

   a. All gauges and instruments associated with the BWTU shall be inspected monthly for calibration dates. No instrument or gauge shall be used if it has not been calibrated in accordance with its manufacturer's recommendations.

b. The type, presence, location and quantity of spill kits shall be verified and annotated monthly. If spill kits are locked up, the location of access keys shall also be verified.

c. Appropriate safety verifications shall be made prior to personnel entry into the tank for inspection.

d. In accordance with HWMR-5, as amended 1989, Part V, 40 CFR section 264.193(c)(4), accumulated liquids discovered in secondary containment structures shall be removed within 24 hours of discovery.

e. Cracks and/or gaps in secondary containment structures discovered during an inspection will be repaired within seven calendar days of discovery. Cracks determined to be minor and not adversely affecting containment integrity shall be logged and delay of repairs justified. Repair of minor cracks may be deferred until regularly scheduled maintenance.

2. Technical Area 54, Area L.

a. The type, presence, location and quantity of spill kits shall be verified and annotated monthly. If spill kits are locked up, the location of access keys shall also be verified.

b. In accordance with HWMR-5, as amended 1989, Part V, 40 CFR section 264.193(c)(4), accumulated liquids discovered in secondary containment structures shall be removed within 24 hours of discovery. In the event inclement weather prevents such removal, the circumstances shall be documented in the facility record and the removal effected not later than the next duty day after the weather allows.

c. Cracks and/or gaps in secondary containment structures discovered during an inspection will be repaired within seven calendar days of discovery. Cracks determined to be minor and not adversely affecting containment integrity, shall be logged and delay of repairs justified. Repair of minor cracks may be deferred until regularly scheduled maintenance.

3. Barium Sands Truck-Mounted-Container Treatment System.

a. The type, presence, location and quantity of spill kits shall be verified and annotated monthly. If spill kits are locked up, the location of access keys shall also be verified.

b. In accordance with HWMR-7, as amended 1992, Part V, 40 CFR section 264.193(c)(4), accumulated liquids discovered in secondary containment structures shall be removed within 24 hours of discovery. In the event inclement weather prevents such removal, the circumstances shall be documented in the facility record and the removal effected not later than the next duty day after the weather allows.

c. Cracks and/or gaps in secondary containment structures discovered during an inspection will be repaired within seven calendar days of discovery. Cracks determined to be minor and not adversely affecting containment integrity, shall be

logged and delay of repairs justified. Repair of minor cracks may be deferred until regularly scheduled maintenance.

4. Warning Signs. The legibility and condition of warning signs shall be included in the weekly inspection. Missing or illegible signs shall be promptly replaced within 24 hours of discovery.

   a. Signs shall be at all entrances to the hazardous waste units. Collocated units may be included within one signed area.

   b. Signs on approachable perimeter fences shall be spaced no more than 50 feet apart.

   c. Signs shall say "Danger, Unauthorized Personnel Keep Out" and "Hazardous Waste Storage Area".

   d. Signs shall be in English and Spanish.

IV.F. RESPONSE TO LEAKS OR SPILLS

The Permittee shall follow the requirements of HWMR-5, as amended 1989, Part V, 40 CFR section 264.196 in response to a leak or spill.

IV.G. CERTIFICATION OF REPAIRS

All major repairs to any tank or associated plumbing shall be certified in accordance with HWMR-5, as amended 1989, Part V, 40 CFR section 264.196(f) prior to being placed back in service.

IV.H. CLOSURE

The Permittee shall close the tanks in accordance with Permit Attachment E, permit paragraph II.L. above and this permit module.

1. Batch Waste Treatment Unit.

   a. At closure, all hazardous waste residues shall be removed from the tank, associated plumbing and the containment structure in accordance with HWMR-5, as amended 1989, Part V, 40 CFR section 264.197(a).

   b. Any component not decontaminated shall be disposed of as hazardous waste in accordance with HWMR-5, as amended 1989, Part V, 40 CFR section 264.197(b).

2. Technical Area 54 Area L.

   a. At closure, all hazardous waste residues shall be removed from the tanks and the containment structure in accordance with HWMR-5, as amended 1989, Part V, 40 CFR section 264.197(a).

   b. Any component not decontaminated shall be disposed of as hazardous waste in

accordance with HWMR-5, as amended 1989, Part V, 40 CFR section 264.197(b).

3. Barium Sands Truck-Mounted-Container Treatment System.

a. At closure, all hazardous waste residues shall be removed from the Truck-Mounted-Container Treatment System and the containment structure in accordance with HWMR-7, as amended 1992, Part V, 40 CFR section 264.197(a).

b. Any component not decontaminated shall be disposed of as hazardous waste in accordance with HWMR-7, as amended 1992, Part V, 40 CFR section 264.197(b).

LANL RCRA Permit Modification Sheet

Module Attachment	Page	Section	Category	Summary of Proposed Change	Modification Class	Class Citation
V		Figure 8	5	Update Figure 8, CAI Process Diagram, to reflect changes to the pollution control equipment train.	1	A.3
V	43	I.5.b	1	Change "EID" to "NMED."	1	A.1
V	43	J.3	2	To clarify the intent of the permit condition, insert "either" after "may be".	1	A.2

MODULE V CONTROLLED AIR INCINERATOR OPERATION

V.A. GENERAL CONDITIONS

1. Authorized Unit. The unit is the modified Environmental Control Products model ECP 500-T Controlled Air Incinerator (CAI) located in Technical Area 50, Building 37 and configured as shown in Figure 8.

2. Destruction and Removal Efficiency. The incinerator and associated effluent control system shall be operated to achieve a minimum destruction and removal efficiency (DRE) of 99.99% calculated in accordance with HWMR-5, as amended 1989, Part V, 40 CFR section 264.343(a). A minimum DRE of 99.9999% shall be achieved whenever waste F027 is incinerated.

3. Regulatory Compliance. In accordance with HWMR-5, as amended 1989, Part V, 40 CFR section 264.343(d), compliance with the operating conditions of this permit will be regarded as compliance with HWMR-5, as amended 1989, Part V, 40 CFR section 264.343. Evidence that compliance with these conditions is insufficient to ensure compliance with the performance standards of HWMR-5, as amended 1989, Part V, 40 CFR section 264.343, shall be information justifying permit modification in accordance with HWMR-5, as amended 1989, Part IX, 40 CFR section 270.41 or 270.42 or permit revocation in accordance with HWMR-5, as amended 1989, Part IX, 40 CFR section 270.43.

V.B. WASTE IDENTIFICATION

1. Authorized Wastes.

   a. Only wastes identified in Permit Attachment G. with the process code "T03" in column D.1. "Processes" shall be incinerated at the CAI.

   b. Only wastes generated at the Permittee's facility shall be incinerated. See permit paragraph II.B.2. above.

2. Prohibited Wastes.

   a. The following listed hazardous wastes shall not be incinerated unless chemical analysis shows them to not exceed one hundred micrograms per gram concentration in the waste:

      (i) U121 Trichloromonofluoromethane (Freon 11)

      (ii) U225 Tribromomethane

      (iii) U075 Dichlorodifluoromethane (Freon 12)

   b. Any future listed hazardous waste with a heat of combustion less than 0.24 kilocalories per gram shall not be incinerated unless chemical analysis shows it to not exceed one hundred micrograms per gram concentration in the waste.

c. Wastes generated off-site shall not be incinerated. See permit paragraph II.B.2.above.

3. Physical Form. Wastes in gaseous, liquid, solid, or semi-solid sludge forms may be incinerated.

V.C. WASTE ANALYSIS

1. Waste Analysis Plan. The Permittee shall follow Permit Attachment A. Each knowledge of process determination shall be documented and justified. Each batch of waste shall be analyzed in accordance with Permit Attachment A.4.1.2.

2. Analysis of Waste Blends. Waste blends of previously analyzed materials shall not require reanalysis unless:

   a. Physical properties are expected to vary more than five percent (5%) from those of the original feedstock, and

   b. Those physical properties cannot be calculated based on previous analytical knowledge of the individual components or blends forming the new mixture.

   c. Five percent (5%) of the waste blends not analyzed on an annual basis shall be subject to analysis as a quality control check of the calculated values. Agreement between analytical data and calculated values of ten percent (10%), based on the analytical data, shall be acceptable. Disagreement shall be investigated for cause and documented in the record, along with appropriate corrective actions. The next waste blend created after a disagreement shall be analyzed to confirm corrective action.

   d. Waste blends may not be incinerated prior to receipt of analytical data.

3. Determination of Radionuclides Content. Each batch of waste treated under this permit shall be surveyed to determine its radionuclide content. Knowledge of Process shall not be used for this survey.

4. Metals Standards. Each batch of liquid waste treated under this permit shall be analyzed to determine its metal content. For each metal, the waste feed rate, in grams/sec, should not exceed that dictated by the emissions screening limits for noncarcinogenic and carcinogenic metals for facilities in complex terrain determined by using the terrain adjusted effective stack height according to the EPA "Guidance on Metals and Hydrogen Chloride Controls for Hazardous Waste incinerators, Vol. IV, March, 1989"' or the succeeding guidance documents. Knowledge of Process analyses may be used on no more than 80% by volume of the wastes treated.

V.D. PRINCIPAL ORGANIC HAZARDOUS CONSTITUENTS

1. Routine Operations. For all hazardous waste burns the following constituents are designated as POHCs unless chemical or physical analysis shows they comprise less than 100 micrograms per gram of the waste:

a. U044 Chloroform

b. U228 Trichloroethylene

c. U226 1,1,1-trichloromethane

d. U211 Tetrachloroethane

2. Bulk-Feed Operations. Whenever the hazardous waste feed contains ten percent by weight or more of any listed hazardous waste, each such constituent is designated a POHC.

V.E. MONITORING

For each hazardous waste burn, the continuous monitoring and/or recording devices below shall be observed hourly by an operator during waste feed operation and the observation recorded in the operating record. For purposes of this requirement, permanent charts which are made a part of the record may be initialed to document such observation. A log identifying the full name associated with the initials shall be included with the record.

1. Flue gas scrubber solution pH, "Process Sump pH Out";

2. Primary Combustion Chamber Temperature, "Lower Chamber Temperature";

3. Secondary Combustion Chamber Temperature, "Upper Chamber Temperature";

4. Waste Feed Rate;

5. Flue gas carbon monoxide content;

6. Secondary combustion chamber oxygen content, "Upper Chamber Oxygen";

7. Combustion airflow rate, "Final Flow Totalizer";

8. Scrubber water recycle flow rate, "Absorber Liquid Flow" and "Quench Liquid Flow".

9. Total hydrocarbon reading from the exhaust stack.

10. Radioactivity from the exhaust stack.

V.F. OPERATION

During hazardous waste feed operations the following operational limits shall be observed:

1. Total Chloride Content. The aggregate chlorine content of the waste plus fuel shall not exceed 99.4 pounds per hour input to the CAI. Each batch of waste shall meet this standard.

2. Waste Feed Rates.

a. Liquid hazardous wastes shall be introduced at a rate not to exceed 1.5 million Btu per hour total thermal input. Total thermal input shall include contributions from auxiliary fuel, hazardous and nonhazardous wastes.

b. Solid hazardous wastes shall be introduced at a rate not to exceed 1.5 million Btu per hour total thermal input. Total thermal input shall include contributions from auxiliary fuel, hazardous and nonhazardous wastes. Of this feed rate, solid hazardous waste mixtures shall not exceed 125 pounds per hour.

3. Venturi Scrubber. The pressure drop across the venturi scrubber shall be a minimum of forty inches W.C.

4. High Efficiency Particulate Air Filters. The pressure drop across both on-line incinerator exhaust gas HEPA filter banks shall be a minimum of one-tenth inch W.C. or alternative equivalent manufacturer's performance specification.

5. Operating Temperatures.

a. The incinerator shall be brought to operating temperature in both the primary and secondary combustion chambers before hazardous wastes are introduced.

b. Primary chamber operating temperature shall be a minimum of 1400 degrees Fahrenheit, measured at the hot duct between the primary and secondary chambers.

c. Secondary chamber operating temperature shall be a minimum of 2000 degrees Fahrenheit, measured at the chamber exit to the high temperature duct.

d. Temperatures shall be maintained above these minimums as long as hazardous wastes remain in the incinerator, except that during an emergency shutdown these temperatures need not be maintained after waste feed is terminated.

6. Effluent Control System Solution.

a. The effluent control system (ECS) scrubber solution shall be recycled to the packed column absorber at a minimum flow rate of 10 gallons per minute.

b. The ECS scrubber solution shall be controlled with either sodium hydroxide or potassium hydroxide to a Ph range above 1.0 $\pm$ 3%.

7. Combustion Air.

a. Exhaust gas flow shall not exceed:

(i) 3654 pounds per hour during solid or semisolid waste incineration, or

(ii) 3933 pounds per hour during liquid waste incineration.

b. Carbon monoxide concentration, as measured by the continuous recording carbon monoxide analyzer, shall not exceed 100 parts per million by volume, except that for a period not to exceed five minutes, the system may continue to burn waste if the carbon monoxide concentration does not exceed 500 parts per million.

c. Oxygen concentration in the secondary combustion chamber shall be a minimum of seven and one-half percent (7.5%) for solids and six percent (6%) for liquids. Measurement accuracy shall be $\pm$ 3%.

8. Total Hydrocarbon.

a. Total hydrocarbon reading in the exhaust gas shall not exceed 20 parts per million corrected to dry stack gas for more than one hour rolling average where the stack gas is sampled at least 4 times per minute.

b. Total hydrocarbon reading in the exhaust gas shall not exceed 100 parts per million for more than one minute.

c. Total hydrocarbon reading in the exhaust gas shall not exceed 500 parts per million for any reading.

9. Radioactivity.

a. The exhaust gas radioactivity measured during operation under this permit shall not exceed the background by ten percent (10%) for more than one minute.

b. The exhaust gas radioactivity measured during operation under this permit shall not exceed the background by fifty percent (50%).

c. Background is defined as that level of radiation read when the incinerator is operating at the parameters required for hazardous waste treatment but no waste feed occurring measured prior to hazardous waste treatment.

10. Automatic Shutdown.

a. The Permittee shall install and properly maintain a system of monitors and automatic waste feed cutoff so that hazardous waste feed is shutdown whenever the operating conditions in permit paragraphs V.F.3. through V.F.9. above are not met.

b. Hazardous wastes shall not be reintroduced to the incinerator until the cause of any automatic shutdown is determined and appropriate corrective action is taken.

11. Waste Handling Practices.

a. Wastes to be incinerated shall be stored only at storage areas authorized in permit paragraph III.A. above.

b. Liquid and solid feed preparation operations which take place at the CAI shall be performed in accordance with the provisions of:

(1) Los Alamos National Laboratory Manual, Chapter 1, Health and Safety, Current edition. A copy shall be readily available to the operator.

(2) Permit Attachment J, "Incinerator Operational Safety". A copy shall be readily available to the operator.

(3) The operating manual for the Controlled Air Incinerator. A copy shall be readily available to the operator.

(4) The applicable Operating Instruction(s), Safe Operating Procedures, and/or Special Work Permit(s) required for the particular operation being conducted. A copy of the applicable document(s) shall be readily available to the operator.

c. Sampling of wastes for analysis in accordance with Permit Attachment A. shall be done at the place of storage or at the incinerator waste feed tanks. Periodic quality control spot sampling may be done elsewhere in the incinerator area at the discretion of the inspector and with the approval of the incinerator supervisor.

V.G. EFFLUENT CONTROL

The incinerator effluent controls shall be operational at all times the incinerator is burning hazardous wastes.

1. Ash Control. Ash resulting from a listed waste burn shall be cemented and disposed of off site as a hazardous waste. Ash resulting from incineration of characteristic wastes or wastes listed solely due to characteristic shall be disposed of as a hazardous waste or analyzed for alternate disposition. If such analysis demonstrates the waste is no longer characteristic as defined in HWMR-5, as amended 1989, Part II, 40 CFR section 261, subpart C, it may be disposed of in accordance with other applicable regulations.

2. Effluent Control System. Effluent control system wastewater and filters shall be disposed of as a hazardous waste in accordance with applicable regulations. "Filters" as used herein applies to both the HEPA filters and the carbon absorber materials. The carbon absorber unit materials shall be replaced at intervals no longer than 2000 operating hours.

V.H. INSPECTION

The Permittee shall inspect the incinerator in accordance with Permit Attachment B. and the requirements below.

1. Spill Kits. The type, presence, location and quantity of spill kits shall be verified and annotated monthly. If spill kits are locked up, the location of access keys shall be verified.

2. Instrumentation. All gauges and instruments shall be inspected for calibration dates prior to incineration of wastes. No instrument or gauge shall be used if it has not been calibrated in accordance with its manufacturers, recommendations.

3. Warning Signs. The legibility and condition of warning signs shall be included in the quarterly inspection. Missing or illegible signs shall be promptly replaced within 24 hours of discovery.

   a. Signs shall be at the entrances to the hazardous waste units. Collocated units may be included within one signed area.

   b. Signs shall say "Danger, Unauthorized Personnel Keep Out" and "Hazardous Waste Storage Area".

   c. Signs shall be in English and Spanish.

   d. Signs on approachable fences shall be spaced no more than 50 feet apart.

4. Automatic Cutoff. The automatic cutoff system shall be tested every 2000 operating hours to demonstrate proper operation.

V.I. RECORDKEEPING

1. Waste History. The incinerator operating record shall include the source, date of receipt, description, quantity and rate of incineration for each batch of hazardous waste incinerated.

2. Waste Analysis. Records of waste analysis shall be kept in accordance with permit paragraph II.K.1.a. above.

3. Inspections. Records of inspection shall be kept for three years from the date of the last action taken as a result of the inspection.

4. Automatic Waste Feed Cutoff. Whenever the automatic waste feed cutoff system required by permit paragraph V.F.8. above operates, the cause, time and remedy or repair shall be entered in the operating record. This record shall include the testing or demonstration operations required by permit paragraph V.H.4. above.

5. Effluent Analysis.

   a. Whenever sampling and analysis of the incinerator combustion exhaust or effluent control system scrubber solution are done, the sampling date, individual(s), methods and analytical results shall be entered in the operating record.

   b. The destruction and removal efficiency (DRE) shall be reverified after incinerator modifications affecting the DRE, upon accumulation of eight thousand hours of hazardous waste incineration time or five years after the

effective date of this permit, whichever occurs first or if ~~EID~~ NMED determines that new information requires further testing of the incinerator. Subsequent to a modification subject to this paragraph the time calculation shall be restarted.

c. Results of calculations of the DRE associated with effluent analysis shall be entered in the operating record.

V.J. CLOSURE

The incinerator shall be closed in accordance with HWMR-5, as amended 1989, Part V, Subpart G and Part V, 40 CFR section 264.351, permit paragraphs II.L. and V.J. and Permit Attachment E.

1. Incinerator Components. The waste feed components and combustion chambers, along with interconnecting plumbing, may be steam cleaned with a detergent solution. The spent cleaning solution shall be collected and analyzed for hazardous constituents. If no hazardous constituents are detected, those components may be considered closed. If hazardous constituents are detected, the steam cleaning may be repeated until no detectable hazardous constituents are found.

2. Effluent Control System. The ECS may be drained and flushed with a detergent solution. The spent cleaning solution shall be collected and analyzed for hazardous constituents. If no hazardous constituents are detected, those components may be considered closed. If hazardous constituents are detected, the cleaning may be repeated until no detectable hazardous constituents are found.

3. Waste Storage Tanks. The waste storage tanks may be either drained and washed with a detergent solution or steam cleaned. The spent cleaning solution shall be collected and analyzed for hazardous constituents. If no hazardous constituents are detected, those components may be considered closed. If hazardous constituents are detected, the cleaning may be repeated until no detectable hazardous constituents are found.

4. Closure Residues.

   a. All final cleaning solutions used for closure shall be tested for POHCs designated in permit paragraph V.D. above. Solutions showing detectible POHC(s) or hazardous waste characteristics shall be disposed of as hazardous wastes.

   b. Any component not decontaminated in accordance with permit paragraph V.J. above shall be disposed of as hazardous waste.

LANL RCRA Permit Modification Sheet

Module Attachment	Page	Section	Category	Summary of Proposed Change	Modification Class	Class Citation

No proposed modifications for Module VI.

MODULE VI STORAGE IN TANKS

VI.A. DESIGNATED STORAGE UNITS

The Permittee may store for more than ninety days hazardous wastes in tanks only in Technical Area 54, Area L.

VI.B. AUTHORIZED WASTES

1. Identification. Only hazardous wastes identified in Permit Attachment G. with the process code "S02" in column D.1. "Processes" shall be stored.

2. Quantities. No more than 5,720 gallons of liquid waste shall be stored at any one time.

VI.C. TANK DESCRIPTION

1. Capacity. The tanks shall be nine feet in diameter and three feet six inches high, Holding approximately 1660 gallons.

2. Type. They shall be constructed of ten-gauge carbon steel and shall be coated inside and out with Carboline Phenoline (@) film or equivalent.

3. Quantity. No more than four tanks shall be used for storage.

4. Condition. If a tank holding hazardous waste is not in good condition (e.g. severe rusting, structural defects) or if it begins to leak, the Permittee shall transfer the hazardous waste from such tank to a tank or container that is in good condition or otherwise manage the waste in compliance with the conditions of this permit.

5. Compatibility of Waste with Tanks. The Permittee shall assure, as required by HWMR-5, as amended 1989, Part V, 40 CFR section 264.199, that the ability of the tank to contain the waste is not impaired.

VI.D. CONTAINMENT

The Permittee shall construct and maintain the secondary containment systems for the tank storage unit in accordance with the requirements of HWMR-5, as amended 1989, Part V, 40 CFR section 264.193.

VI.E. IGNITABLE OR REACTIVE WASTE

The Permittee shall not locate tanks holding ignitable or reactive waste within 15 meters (50 feet) of the facility property line. The provisions of HWMR-5, as amended 1989, Part V, 40 CFR section 264.198 will be followed.

VI.F. INCOMPATIBLE WASTES

The Permittee shall manage incompatible wastes or incompatible wastes and materials in accordance with the requirements of HWMR-5, as amended 1989, Part V, 40 CFR section 264.199.

VI.G. CLOSURE

The Permittee shall comply with the Closure Plan, Permit Attachment E. and permit paragraph II.L. above, for closure of permitted storage tanks.

VI.H. INSPECTION

1. Inspection Plan. The Permittee shall inspect the tank storage areas in accordance with Permit Attachment B.

2. Spill Kits. The type, presence, location and quantity of spill kits shall be verified and annotated monthly. If spill kits are locked up, the location of access keys shall be verified.

3. Accumulated Liquids. In accordance with HWMR-5, as amended 1989, Part V, 40 CFR section 264.193(c)(4), accumulated liquids discovered in secondary containment structures shall be removed within 24 hours of discovery. In the event inclement weather prevents such removal, the circumstances shall be documented in the facility record and the removal effected not later than the next duty day after the weather allows.

4. Repairs to Secondary Containment Structure. Cracks and/or gaps in secondary containment structures discovered during an inspection will be repaired within seven calendar days of discovery. Cracks determined to be minor and not adversely affecting containment integrity, shall be logged and delay of repairs justified. Repair of minor cracks may be deferred until regularly scheduled maintenance.

5. Warning Signs. The legibility and condition of warning signs shall be included in the quarterly inspection. Missing or illegible signs shall be promptly replaced within 24 hours of discovery.

    a. Signs shall be at the entrances to the hazardous waste units. Collocated units may be included within one signed area.

    b. Signs on approachable perimeter fences shall be spaced no more than 50 feet apart.

    c. Signs shall say "Danger, Unauthorized Personnel Keep Out," and "Hazardous Waste Storage Area".

    d. Signs shall be in English and Spanish.

6. Freeboard. The tanks shall maintain a minimum of six inches of freeboard at all times.

VI.I. RESPONSE TO LEAKS OR SPILLS

The Permittee shall follow the requirements of HWMR-5, as amended 1989, Part V, 40 CFR section 264.196 in response to a leak or spill.

VI.J. CERTIFICATION OF REPAIRS

All major repairs to any tank or associated plumbing shall be certified in accordance with HWMR-5, as amended 1989, Part V, 40 CFR section 264.196(f) prior to being placed back in service.

LANL RCRA Permit Modification Sheet

Module Attachment	Page	Section	Category	Summary of Proposed Change	Modification Class	Class Citation
VII	47	B.1.a	2	Change "(F003)" to "(D001, D002)."	1	A.1
VII	47	B.1.a	2	Add "(D003)" to sentence.	1	A.1

MODULE VII INDUSTRIAL INCINERATOR OPERATION

VII.A. GENERAL CONDITIONS

1. Authorized Unit. The unit is the Spronz Incinerator Corporation, model RL80-P incinerator located in Technical Area 16 and listed as structure [~~16-1150~~ 16-1409].

2. Destruction and Removal Efficiency. Emissions from the incinerator shall meet all Federal and State air standards and regulations.

VII.B. WASTE IDENTIFICATION

1. Authorized wastes.

   a. Wastes listed as hazardous waste solely because they are ignitable, corrosive or both (~~F003~~ D001 and D002).

   b. Wastes listed as hazardous waste solely because they are reactive (D003).

   c. Wastes listed as hazardous wastes solely because they exhibit the characteristic (s) of ignitabilty, corrosivity, or both.

   d. Wastes listed as hazardous wastes solely because they exhibit the characteristic of reactivity.

2. Prohibited wastes.

   a. No hazardous wastes other than those identified in permit paragraph VII.B.1. above shall be incinerated in this unit.

   b. No off-site wastes shall be incinerated.

VII.C. WASTE ANALYSIS

1. Waste Analysis Plan. The Permittee shall follow Permit Attachment A. where applicable.

2. Batch analysis. Each batch to be incinerated shall be inspected by a knowledgeable individual for the presence of ignitable, corrosive or reactive wastes and the absence of prohibited wastes. A signed record of each inspection shall be retained in the facility records.

3. Initial Analysis. Each new mixture of wastes not previously analyzed shall be analyzed prior to incineration for:

   a. Heating value,

   b. Viscosity or physical form,

c. identification of any hazardous constituent,

d. An approximate quantification of any hazardous constituent, and

e. The absence of any HWMR-5, as amended 1989, Part II, Appendix VIII constituent in a concentration in excess of one hundred micrograms per gram of waste.

VII-D. WASTE STORAGE

Wastes to be incinerated shall be stored in Technical Area 16, Building 290. Building 290 shall not accumulate hazardous wastes for greater than ninety days. All the requirements of HWMR-5, as amended 1989, Part III, 40 CFR section 262.34 shall be met.

VII-E. RECORD KEEPING

1. Waste History. The incinerator operating record shall include the source, date of receipt, description, quantity and date of incineration for each batch of hazardous waste incinerated.

2. Waste Analysis. Where applicable, the sampling date, individual(s), method and analytical results for each batch sampled at the incinerator shall be entered in the operating record.

3. Closure. The final disposition of the closure residues shall be recorded.

VII.F. CLOSURE

The incinerator shall be closed in accordance with the requirements of HWMR-5, as amended 1989, Part V, 40 CFR section 264.351 and Permit Attachment E.

TABLE I-1

TECHNICAL AREA ZERO GENERATION SITES

DESIGNATION	DESCRIPTION	ANTICIPATED WASTES
0-480	Pajarito School Engineering offices	D001, D002
0-1197	Mesa School Training offices/classrooms	Any training materials
0-1237	Pueblo Complex Environmental laboratory	Any sample or analysis reagents

NOTE:

No other sites are included in the on-site definition in permit paragraph I.H.3.c.

TABLE II-1

ENVIRONMENTAL MONITORING LOCATIONS

STATION	N-S Coordinate (LANL Grid)	E-W Coordinate (LANL Grid)	Map No.
Los Alamos Reservoir	N105	W090	7
Frijoles	S280	E180	9
Canada del Buey	N010	E150	46
Water Canyon at Beta	S090	E090	48
Acid Weir	N125	E070	49
Pueblo - 2	N120	E155	51
Pueblo - 3	N085	E315	53
DPS - 1	N090	E160	57
SCS - 2	N060	E140	66
Pajarito Stream	S180	E410	35
Ancho Stream	S295	E340	36
Frijoles Stream	S365	E235	37
Pajarito Canyon (PCO-3)	S098	E293	104
LAO-4.5	N065	E270	64
MCO-3	N040	E110	69
MCO-8	N030	E190	74
Basalt Spring	N065	E395	56

TABLE II-2 SAMPLING PARAMETERS

TOTAL METALS	ORGANICS
Arsenic	Halogenated volatile organics
Barium	Nonhalogenated volatile organics
Cadmium	Acid-extractable semivolatile organics
Chromium	Base-neutral extractable semivolatile organics
Lead	Phenols
Mercury	
Selenium	
Silver	
Nickel	
Berylium	
Copper	
Zinc	
Iron	

OTHER

Cyanide
pH

All methods are as published in US EPA SW-846, 3rd Edition or later.

If any metal's total concentration exceeds that metal's standard for Extraction Procedure Toxicity, a determination of the Extraction Procedure Toxicity concentration for that metal will be performed. Both data will be recorded and reported.

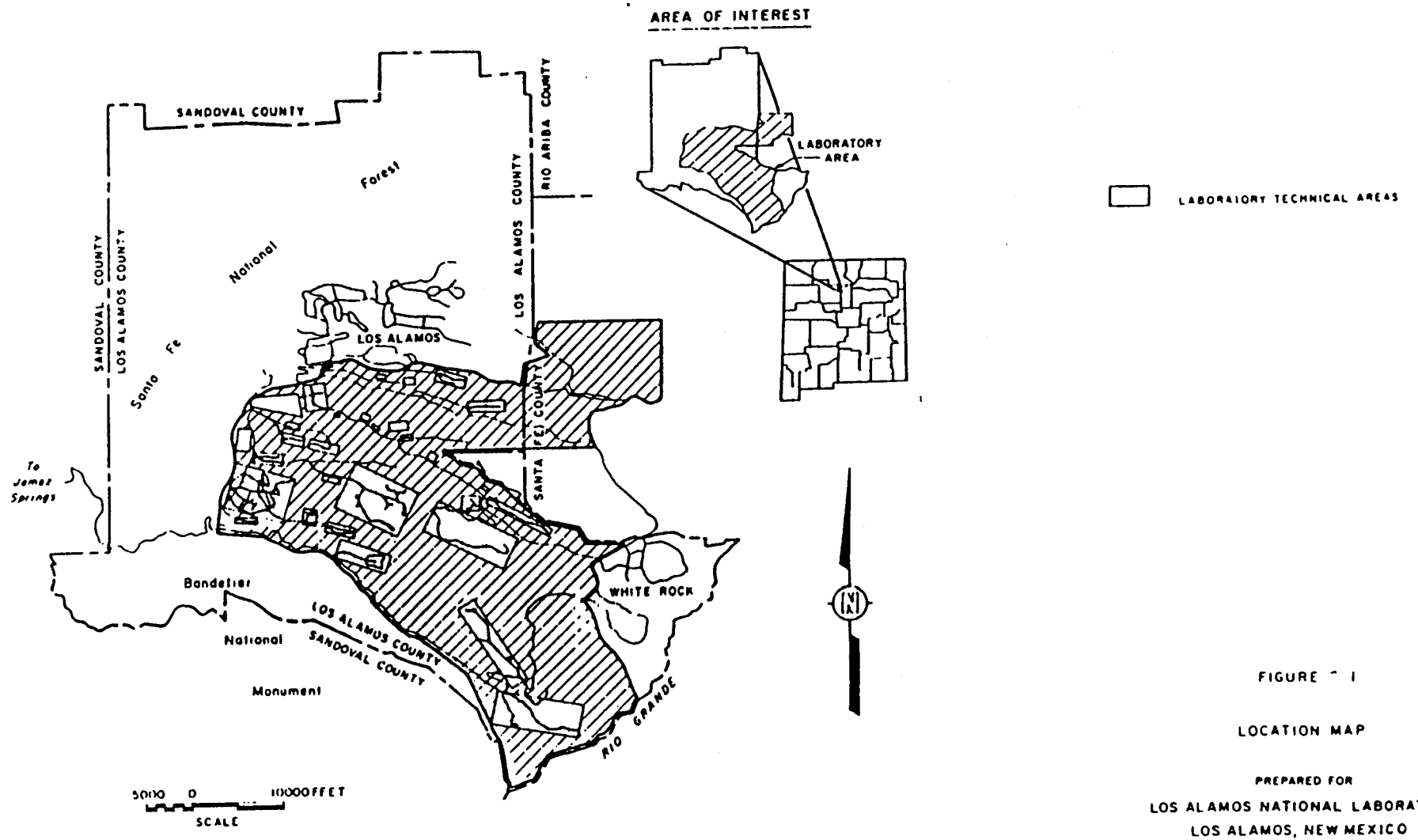

FIGURE 1

LOCATION MAP

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IT CORPORATION

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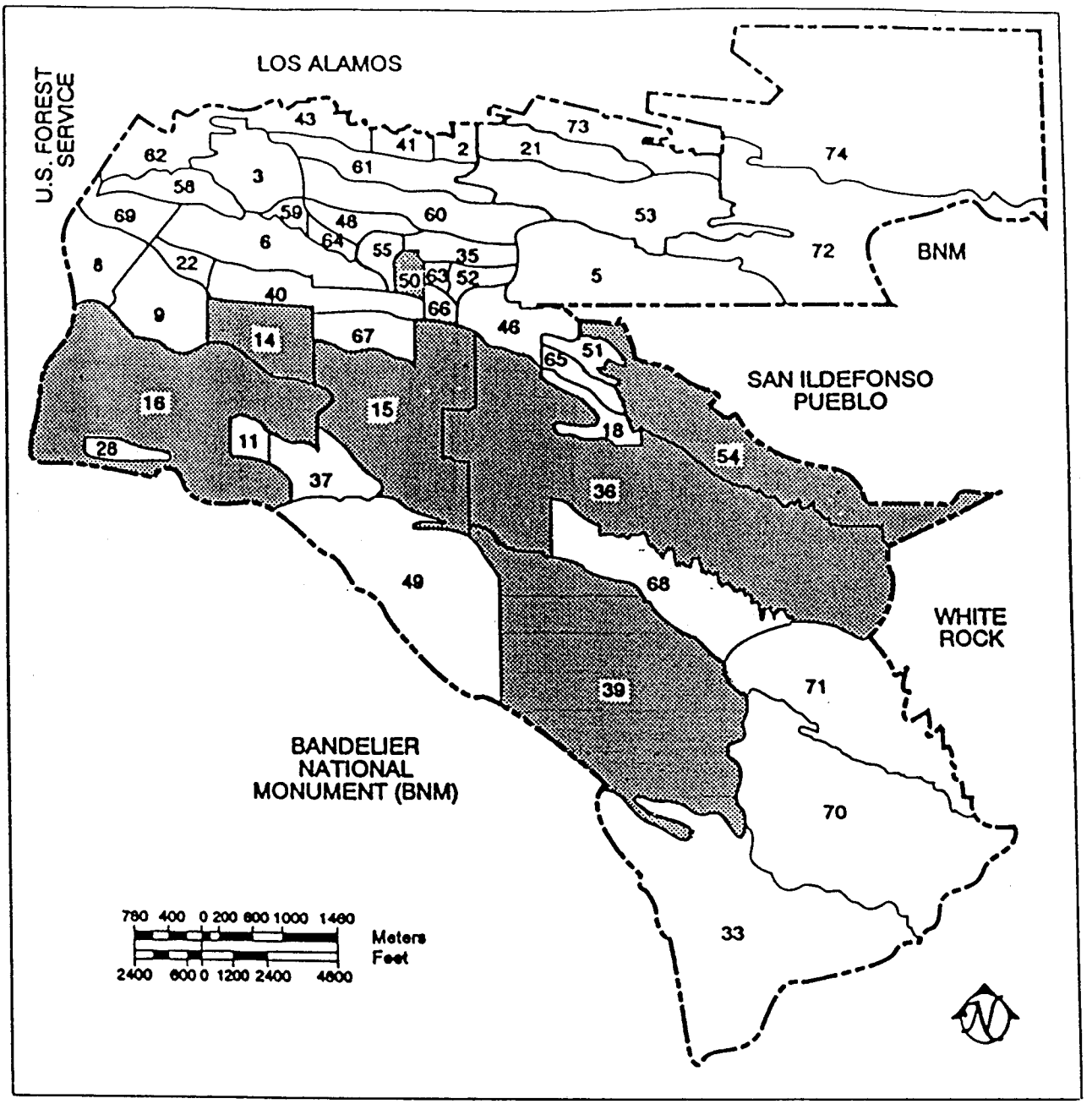

SHADING INDICATES TECHNICAL AREAS IN WHICH WASTE MANAGEMENT UNITS ARE LOCATED

FIGURE 2

LOS ALAMOS
TECHNICAL AREAS

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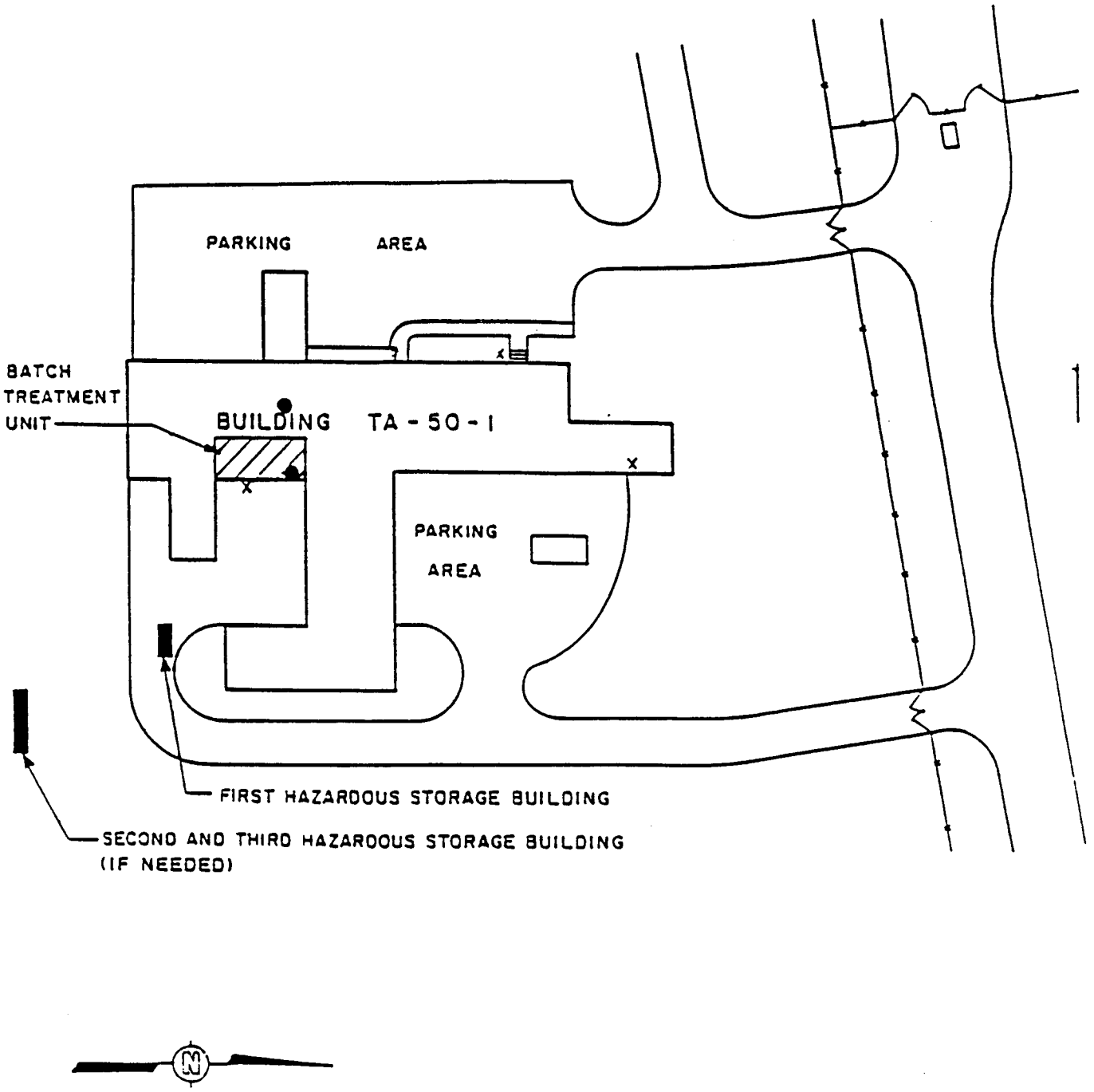

FIGURE 3 BATCH TREATMENT UNIT BUILDING TA-50-1

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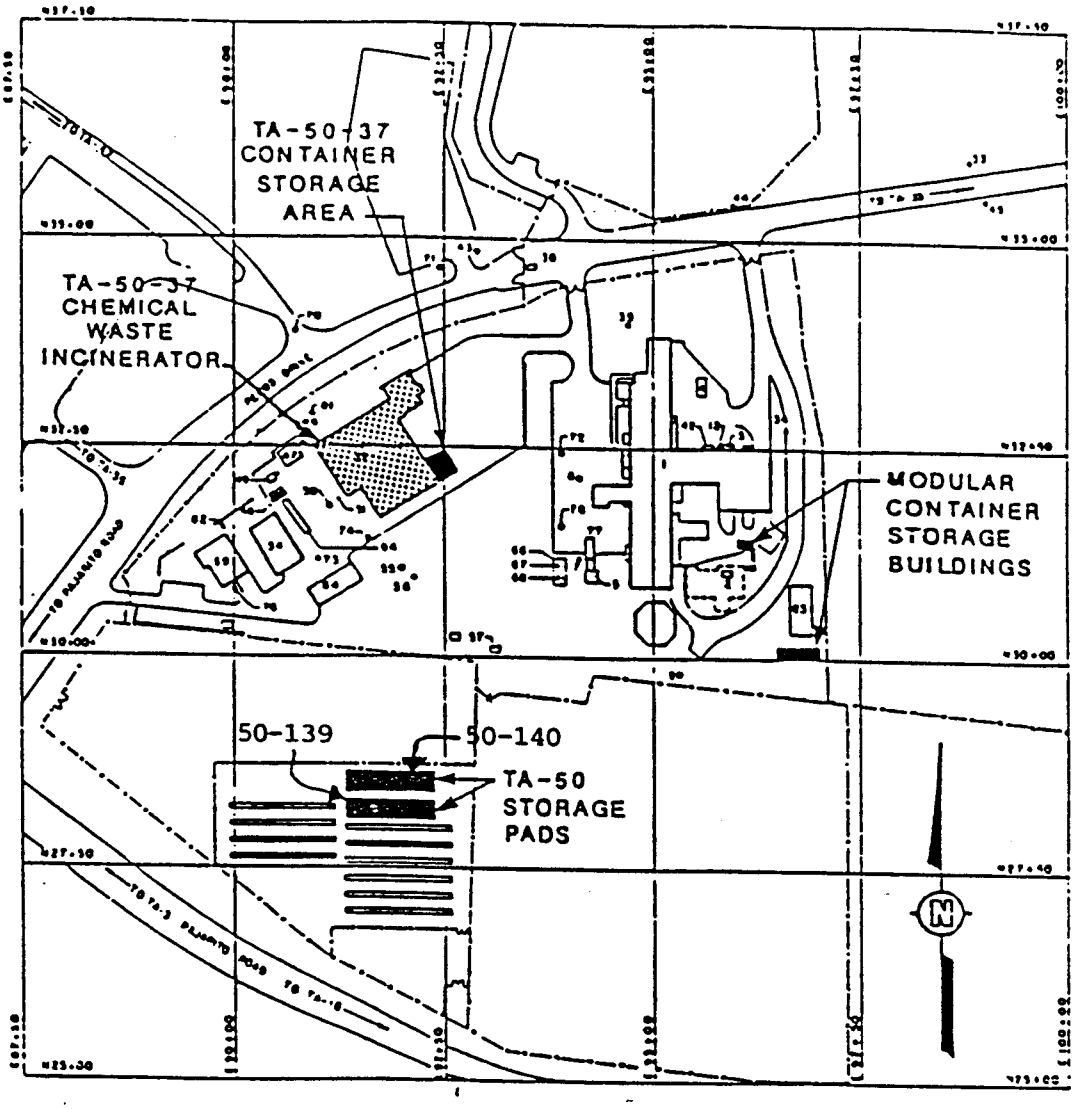

FIGURE 4

LOCATIONS OF TA-50
CHEMICAL WASTE INCINERATOR
AND CONTAINER STORAGE
UNITS

PREPARED FOR

LOS ALAMOS
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LOS ALAMOS, NEW MEXICO

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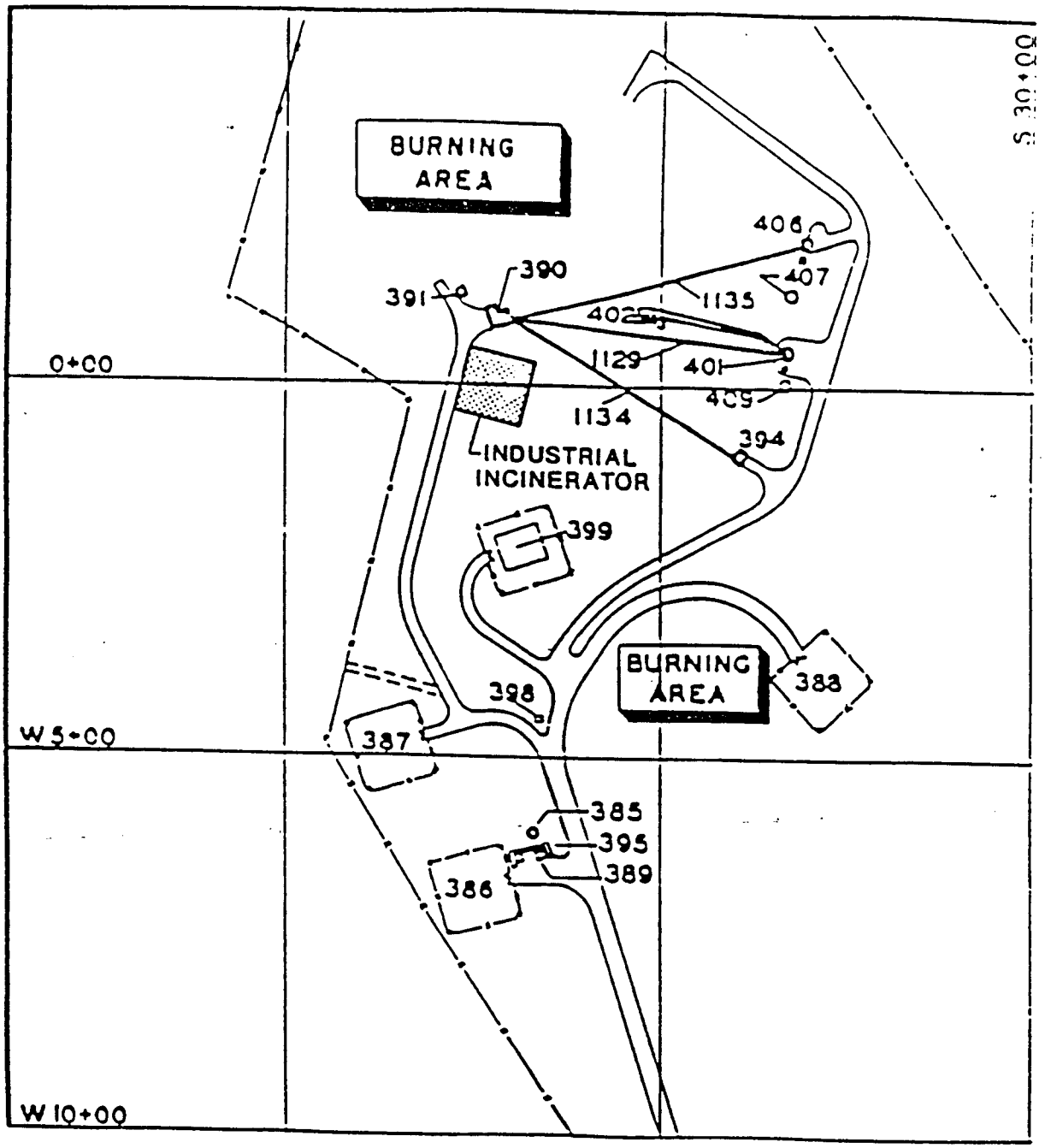

FIGURE 5

TA-16 INDUSTRIAL INCINERATOR

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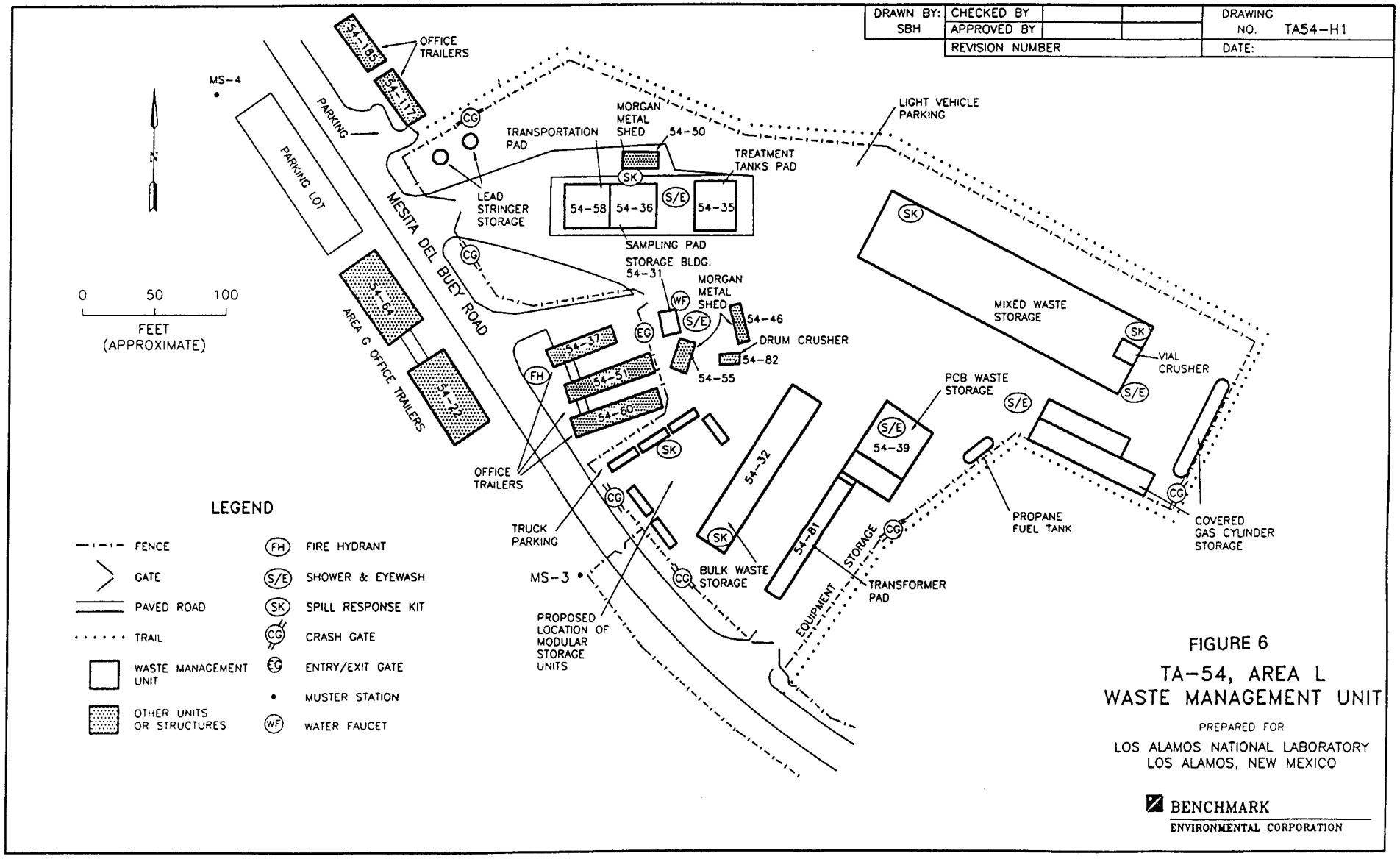

FIGURE 6

TA-54, AREA L
WASTE MANAGEMENT UNIT

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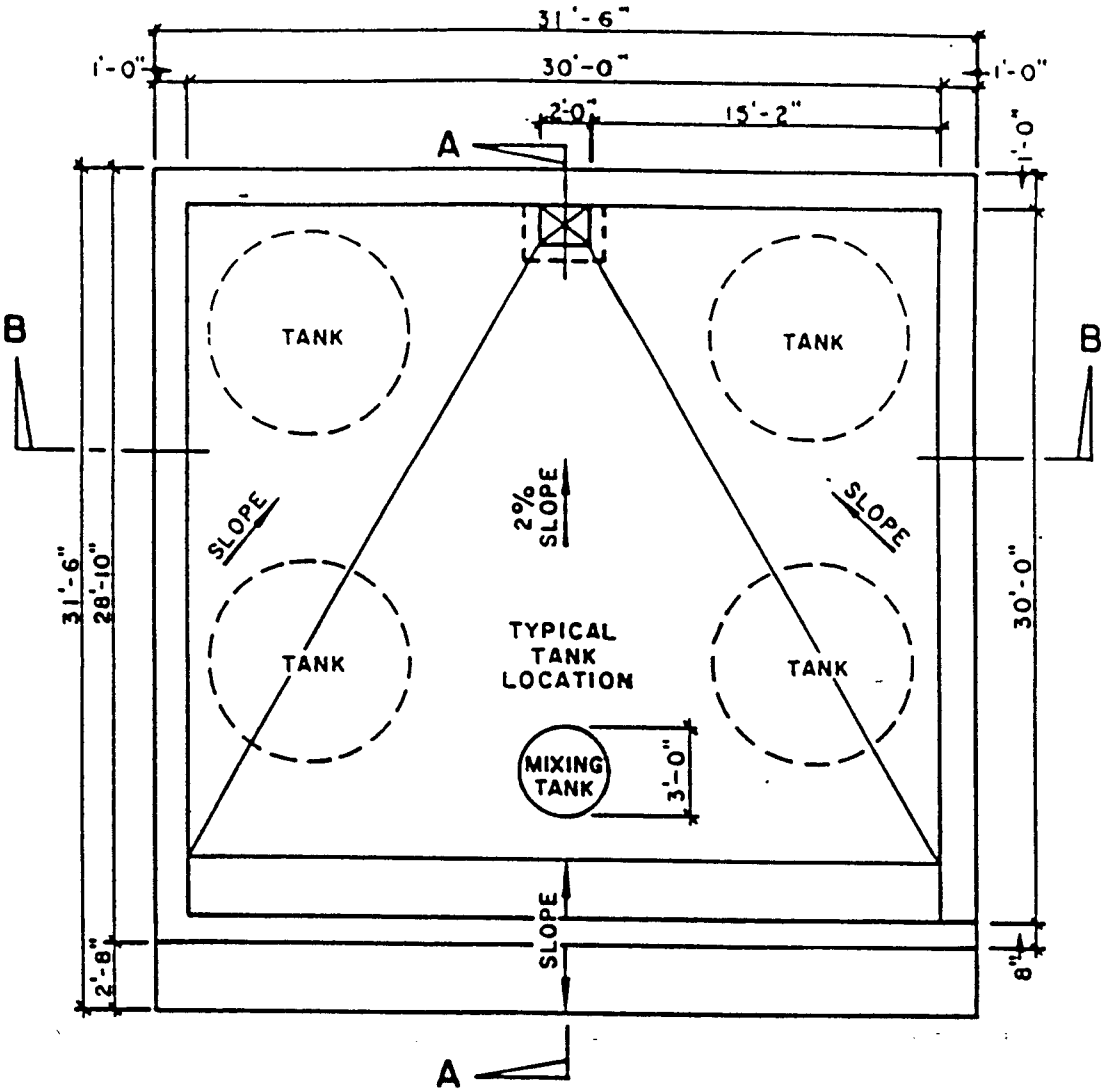
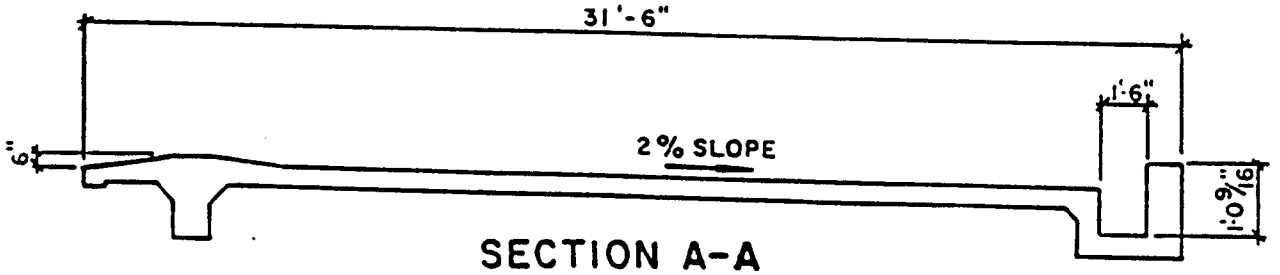
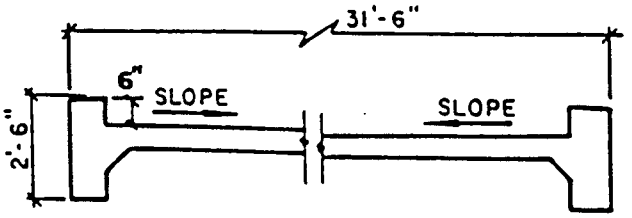
BENCHMARK
ENVIRONMENTAL CORPORATION





SECTION A-A
NOT TO SCALE



SECTION B-B
NOT TO SCALE

FIGURE 7

TA 54, AREA L
TREATMENT TANKS
PLAN

PREPARED FOR

LOS ALAMOS NATIONAL LABORATORY
LOS ALAMOS, NEW MEXICO

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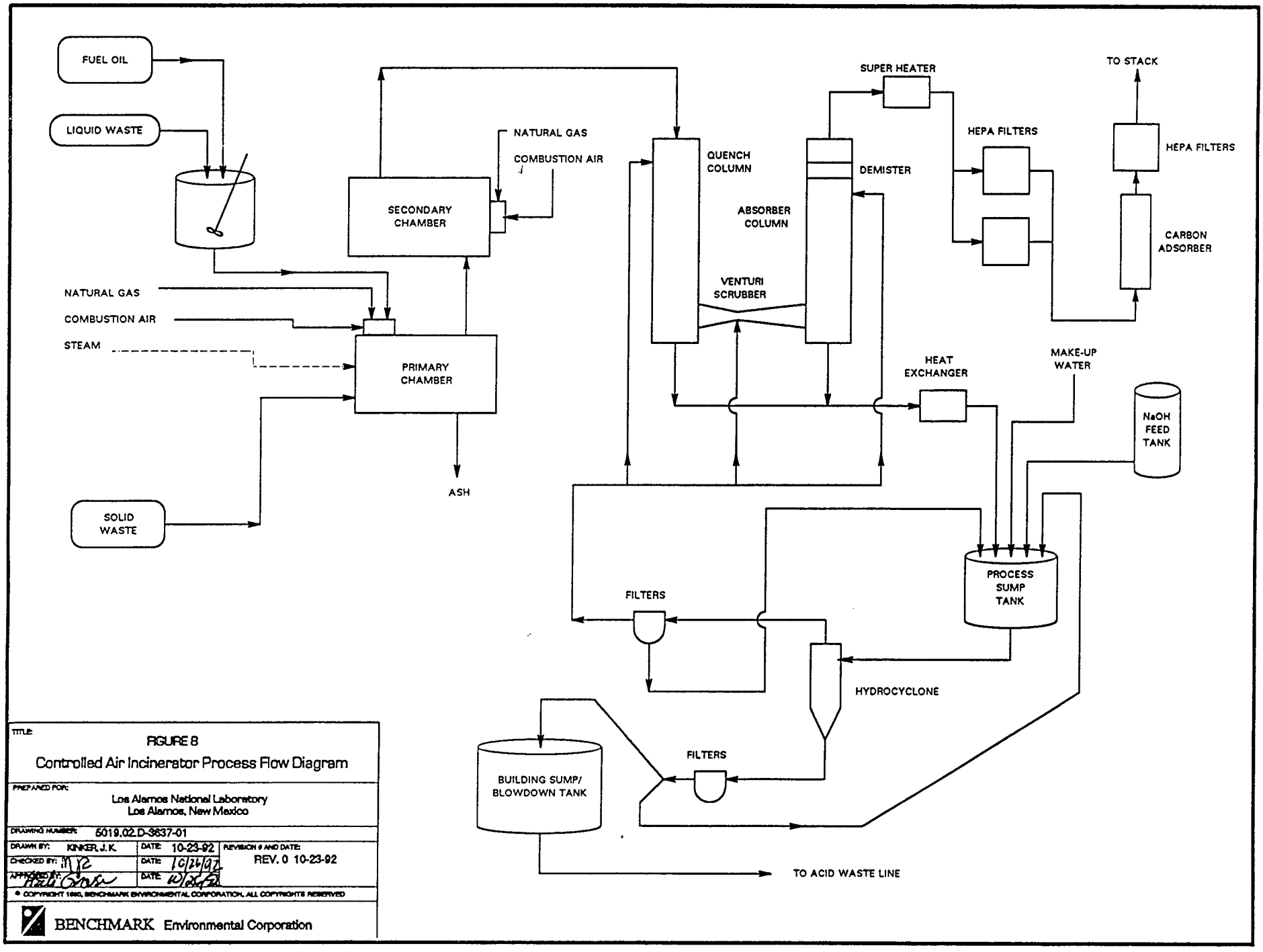

TITLE:

FIGURE 8

Controlled Air Incinerator Process Flow Diagram

PREPARED FOR:

Los Alamos National Laboratory
Los Alamos, New Mexico

DRAWING NUMBER: 5019.02.D-3637-01

DRAWN BY: KINKER, J.K.	DATE: 10-23-92	REVISION # AND DATE:	
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APPROVED BY:	DATE: 10/26/92		

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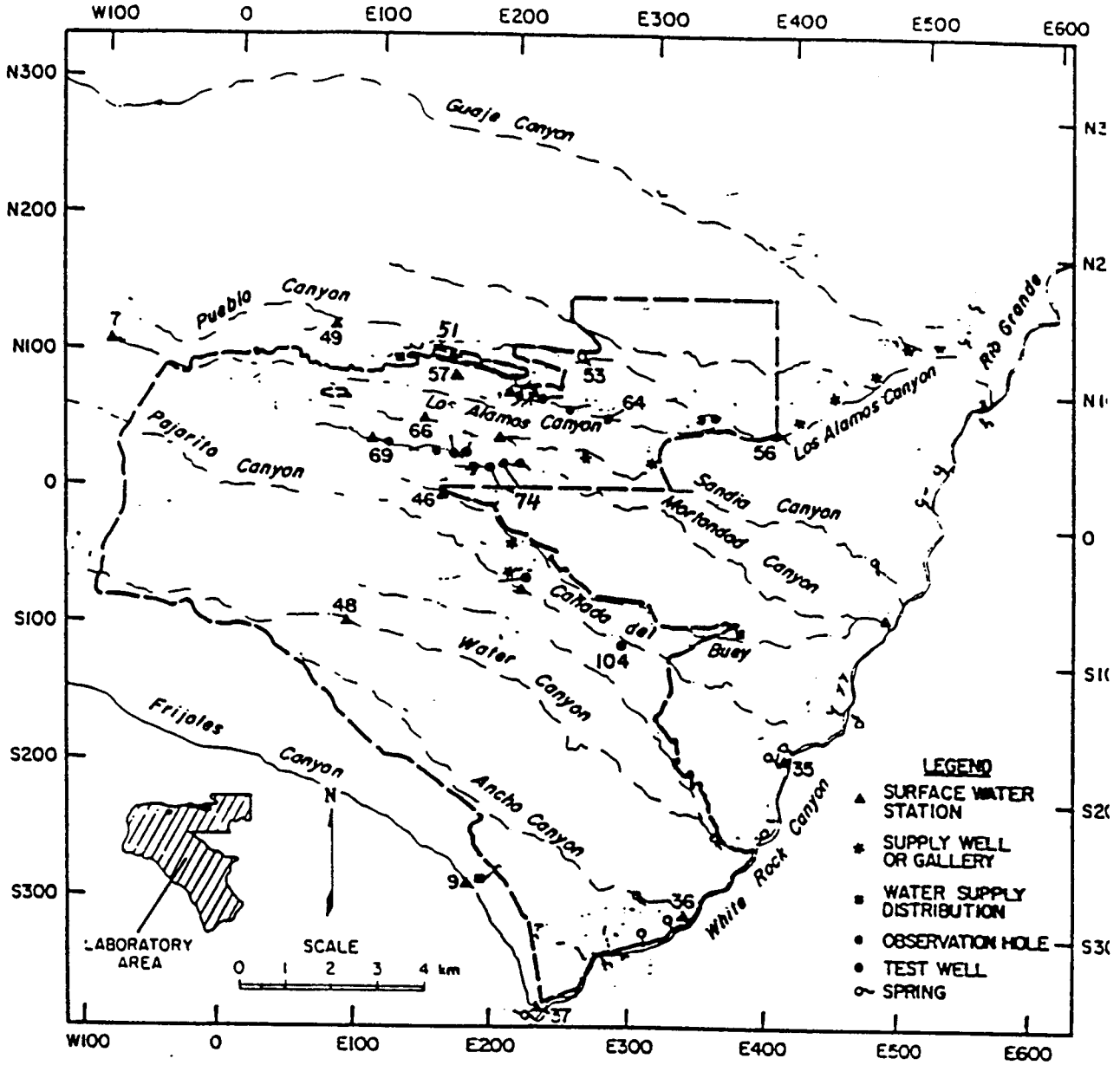

Fig. 9 Surface and ground water sampling locations on and near the Laboratory site.

FIGURE 10

FACILITY RELEASE INSPECTION REPORT

Submit to:

Secretary,
New Mexico Environment Department
1190 St. Francis Drive
Santa Fe, NM 87503

SAMPLE LOCATION _____
SAMPLE DATE _____
SAMPLE NUMBER _____
SAMPLE COLLECTOR _____

METALS (Totals)

TRT.*		CODE	UNITS	QUANTITY	DATE ANALYZED
____	Arsenic	01002	ug/l	_____	_____
____	Barium	01007	ug/l	_____	_____
____	Cadmium	01027	ug/l	_____	_____
____	Chromium	01034	ug/l	_____	_____
____	Lead	01051	ug/l	_____	_____
____	Mercury	71900	ug/l	_____	_____
____	Selenium	01147	ug/l	_____	_____
____	Silver	01077	ug/l	_____	_____
____	Copper	01042	ug/l	_____	_____
____	Iron	01045	ug/l	_____	_____
____	Berylium	01012	ug/l	_____	_____
____	Nickel	01067	ug/l	_____	_____
____	Zinc	01092	ug/l	_____	_____

* Annotate field treatment as follows: **NF** = no filtration and/or **A** = 5 ml HNO_3

ORGANICS

SUBSTANCE	CODE	UNITS	QUANTITY	DATE ANALYZED
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

(Continue on a separate sheet if required)

NM0890010515-1

NM0890010515-1

MASS BALANCE

STREAM NUMBER		1	2	3	4	5	6	7	8	9	10
DESCRIPTION		BARIUM SAND	GYPSUM	WATER (C)	SULFURIC ACID	PORTLAND CEMENT	AIR INLET	TOTAL PARTICULATE	TOTAL PARTICULATE	SCRUBBER WATER	SOLIDIFICATION SLURRY
MASS PER BATCH KG (A)	SOLIDS	1023	256	—	146	116 (E)	—	0.12 (D)	4×10^{-5} (F)	—	1514 (I)
	WATER	50	—	465	11	—	90 (G)	90 (G)	125 (H)	—	518 (I)
VOLUME PER BATCH LITER (A)		1000 (B)	110	465	86	36	—	—	—	—	1065 (K)
FLOW RATE		—	—	6 GPM (J)	83 GPH (J)	—	1500 ACFM	1500 ACFM	1500 ACFM	1.1 GPM	—

(A) – BATCH IS FIVE DRUMS OF BARIUM SAND.

(B) – Sp. Gr. APPROXIMATELY 3.0; BULK DENSITY APPROXIMATELY 1/3 Sp. Gr.

(C) – SUFFICIENT FOR TREATMENT & SOLIDIFICATION; NO EXTRA WATER IS ADDED FOR HEAT SINK.

(D) – FROM AP-42 EMISSION GUIDELINES.

(E) – CALCULATED TO PRODUCE 50 PSI STRENGTH.

(F) – CALCULATED FORM SCRUBBER EFFICIENCY DATA.

(G) – ASSUMES 64 GRAINS/POUND DRY AIR – 4 HOURS/BATCH.

(H) – ASSUMES 88 GRAINS/POUND DRY AIR – 4 HOURS/BATCH. (52% HUMIDIFICATION EFFICIENCY)

(I) – INCLUDES NET WATER INCREASE BY REACTION – 26.8 Kg. (SEE APPENDIX D)

(J) – INTERMITTENT FLOW.

(K) – ESTIMATED.

EQUIPMENT

NUMBER	NAME	SIZE	CAPACITY
F-10	BASKET STRAINER	200 MESH	304 STAINLESS STEEL
HD-1	DUST HOOD W/GRIZZLEY	2-1/2 INCH OPENINGS	316 STAINLESS STEEL
M-1	MIXER	4 YARDS	316 STAINLESS STEEL
P-16	DIAPHRAGM PUMP	1.5 GPM AT 140 FT. HEAD	316 STAINLESS STEEL
P-18	ACID METERING PUMP	3/4 HP – 83 GPH	ALLOY 20
TK-1	INDUSTRIAL WATER TANK	55 GALLONS	304 STAINLESS STEEL
VS-14	VENT SCRUBBER	7.5 HP – 1500 ACFM AT 6" SP	STAINLESS STEEL

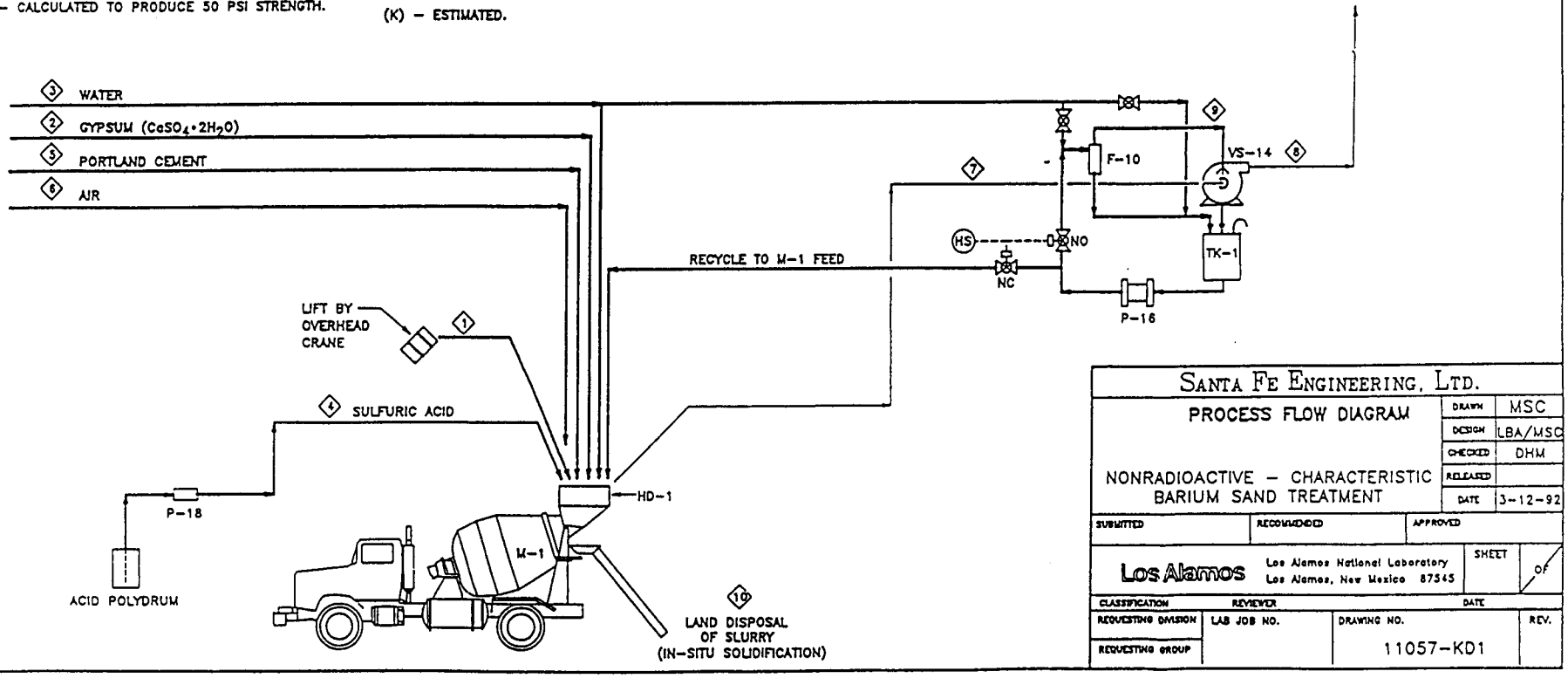

FIGURE 11 BARIUM SANDS TRUCK-MOUNTED CONTAINER TREATMENT SYSTEM

ATTACHMENT B

INSPECTION PLAN

MODIFICATION SUMMARY:

Proposed Modification Class - 2

Class Citation - 40 CFR Appendix I to § 270.42, B.4

Summary of Changes -

The proposed modifications to the Inspection Plan will allow these activities to be carried out more effectively and in accordance with current practices, administrative policies, and operations at Los Alamos National Laboratory.

The redline/strikeout conventions used to highlight proposed modifications to other sections of the permit have not been used in this case because the Inspection Plan has been reorganized relative to the existing Attachment B to the Permit.

The proposed Inspection Plan includes procedures for inspecting the proposed Barium Sands Truck-Mounted-Container Treatment System, as well as inspection checklists that will be more readily understood by personnel conducting inspections. The proposed Inspection Plan is also organized more clearly, eliminating any ambiguities in required inspection frequencies.

Overall, the proposed Inspection Plan will be more protective of human health and environment because it is more comprehensive and more clearly reflects current operations at Los Alamos National Laboratory.

ATTACHMENT B

INSPECTION PLAN

ATTACHMENT B
INSPECTION PLAN

B.1.0 INTRODUCTION

This document presents inspection requirements for hazardous waste treatment and storage units at Los Alamos National Laboratory (the Laboratory), written in accordance with New Mexico Hazardous Waste Management Regulations-6 (HWMR-6), and this permit.

Inspection plans are implemented to identify equipment malfunction, deterioration, and operator errors that might lead to releases of hazardous waste to the environment and pose a threat to human health and the environment. Inspections will be conducted at a sufficient frequency to identify problems promptly and allow for timely repair and cleanup.

B.1.1 HAZARDOUS WASTE

Hazardous waste generated by Laboratory activities can be considered as three general types: (1) wastes from processing operations, (2) wastes from research and development (R&D) activities, and (3) high explosive (HE) waste. Each of these general types has unique characteristics. Processing wastes typically are significant volumes of materials that contain a very limited number of contaminants. R & D wastes, however, are typically lesser volumes of a variety of laboratory reagents, chemicals, solvents, and other general laboratory waste. The composition and concentration of contaminants in a given process waste is generally uniform unless modifications to the process are made. Conversely, the wastes from R & D activities continually vary depending on the activities of the rapidly changing R & D efforts at the Laboratory. HE wastes consist of a narrow assemblage of chemicals, the concentrations of which may vary. The chemical assemblage, however, remains fairly constant.

Overall responsibility for hazardous waste management resides with the Environmental Management (EM) Division Waste Management Group (EM-7). EM Division's organizational structure is shown in Figure B-1. Generators of hazardous waste are responsible for proper identification, segregation, and documentation of their waste. Generators with less-than-90-day accumulation and/or satellite accumulation areas in their operating area are responsible for management of those units, including inspections. Except for HE hazardous waste and classified hazardous waste, on-site packaging, transportation, and greater-than-90-day accumulation of hazardous waste is the responsibility of EM-7. EM-7 treats the barium-

contaminated sands from some of the HE operations. Hazardous waste storage and treatment unit information is summarized in Table B-1.

B.2.0 GENERAL INSPECTION REQUIREMENTS

B.2.1 INSPECTION SCHEDULES

Inspection schedules for hazardous waste units have been developed according to requirements specified in 40 CFR Part 264. Inspection schedules which outline the items to be addressed, as well as inspection frequencies, are provided for each unit type in Sections B.3.0 through B.5.0, and summarized in Table B-2.

The Inspection Record Form (IRF) must be completed according to the schedules provided. In the event that the primary inspector is not available to complete the IRF, an alternate must be responsible for its completion. For those units where daily inspections are required, an inspection must be conducted and recorded for each working day that waste is treated, processed, or stored. For each working day that waste is not treated, processed, or stored, a check mark must be placed in the "No Use" block in Part I of the IRF. Weekly inspections must be conducted and recorded on the first working day of the week.

B.2.2 INSPECTION RECORDS

Inspections are conducted by assigned personnel from the operating group that manages the hazardous waste unit. Originals of the inspection records will be kept in an inspection logbook by the groups responsible for each hazardous waste unit and retained for a minimum of three years from the date of inspection. Copies of inspection records must be sent to the Environmental Protection Group (EM-8), Hazardous and Solid Waste Section, at the end of each work week. The inspection records must be available for review by the New Mexico Environment Department (NMED), the U.S. Environmental Protection Agency (EPA), or the DOE during facility compliance inspections.

An example of the IRF used at the Laboratory and instructions for its use are provided as Attachment 1. The form may be modified, or an equivalent form developed by EM-8, if necessary. The IRF is a comprehensive form which applies to all categories of hazardous waste units; thus, not all sections of the IRF apply to all units. The form encompasses 40 CFR Part 264 requirements for permitted hazardous waste units, and additional requirements directed by the Laboratory policy. The instructions accompanying the IRF provide specific guidance for each inspection parameter listed on the IRF.

For every item requiring inspection, a response must be entered in the "Condition" column. The two responses are "OK" and "AR" (action required). Either "OK" or "AR" must be entered for each inspected item. If the response is "AR", the action required must be noted in Part II. If more than one "AR" is listed, "ARs" should be numbered. The date any corrective action is taken and a description of the action taken must be entered in the "Action/Date" column on the IRF. Only after corrective action has been completed and recorded on an IRF can an "OK" be entered in the "Condition" column on the IRF.

B.2.3 INSPECTION FREQUENCY

Inspection frequencies relevant to the Laboratory hazardous waste activities are specified in the latter sections of this plan and are in accordance with 40 CFR Part 264. Inspection frequencies may be increased at the discretion of the operator or EM-8 if unexpected malfunctions occur or if an accelerated rate of deterioration is found in equipment in use. If inspection results indicate that corrective measures are warranted, any and all actions taken, along with time, date, and other pertinent information, will be recorded on the inspection form and all subsequent inspection forms until corrective measures are completed.

B.2.4 ADDITIONAL INSPECTION REQUIREMENTS

In addition to unit-specific regulatory inspection requirements, the Laboratory has incorporated additional requirements for inspection of safety and emergency equipment, monitoring equipment, security devices, and operating and structural equipment into the daily and weekly inspection schedules, as provided in Sections B.3.0 through B.5.0.

B.2.5 ACTIONS RESULTING FROM INSPECTIONS

Three types of actions that can be taken in response to an "AR" recorded in the IRF include preventative action, emergency action, or a non-emergency remedial action. Each of these types of actions is described below.

B.2.5.1 Preventative Action

If any defects, deterioration, damage, or potential hazards are discovered during an inspection, appropriate action, which may include repairs, maintenance, and replacement, will be completed as soon as practicable to minimize further damage and prevent the need for emergency repairs. Any preventative action taken in response to an inspection will be noted on the IRF.

B.2.5.2 Emergency Action

If a condition is found in which a release to the environment is imminent or has already occurred, the condition will be assessed by the supervisor of the affected area. If this assessment indicates that human health and the environment may be adversely affected, the Hazardous Waste Facility Contingency Plan will be implemented immediately. In the event of a hazardous waste release, any sampling, decontamination, and verification will be conducted as specified in the Contingency Plan. If a hazard is found imminent or if a hazardous situation already exists, remedial action will be initiated immediately and the unit not reused until corrective action is complete.

B.2.5.3 Non-Emergency Remedial Action

If the Supervisors's assessment indicates that the implementation of the Contingency Plan is not necessary, he will determine the appropriate response procedures. If the supervisor decides not to implement the Contingency Plan, he will notify EM-8 the next duty day of the circumstances, and his decision. This notification and the individual notified will be logged in the inspection record. In the case of small spills, vermiculite, or other compatible absorbent is poured over the spill area and once the liquid is absorbed it is swept or shoveled into drums or other appropriate containers. For spills involving larger liquid volumes, free liquids are pumped into drums and absorbent is used as above to remove the remaining liquid. Once liquids are removed, the ~~swipe~~ surface is cleaned using appropriate cleaning agents. All expanded cleaning material will be considered hazardous waste and handled accordingly.

B.3.0 CONTAINER STORAGE UNITS - SCHEDULED INSPECTIONS

Each container storage unit listed in Table B-1 is inspected according to the schedule provided below and summarized in Table B-2.

B.3.1 DAILY

Areas that are subject to spills, such as loading and unloading areas, will be inspected each working day when in use (i.e., when waste is stored at the unit). Daily inspection requirements must also be met when: (1) containers that have the potential for spills and leaks are moved within a container storage area, and (2) when new containers of hazardous waste are placed in the storage area. For the daily inspection, the items in the following blocks on the IRF will be addressed:

Block Number	Item(s)
1 - 5	General information
7	(Un)loading area
12	Eye wash/safety shower
13	Structural integrity of containers
14	Covers/lids of containers
16	Labels
22	Secondary containment structures
23	Container segregation and 2-foot aisle space
39 - 45	General information

B.3.2 WEEKLY

Weekly inspection requirements for container storage areas, to be completed on the first working day of each week, include the items in the following blocks on the IRF:

Block Number	Item(s)
1 - 5	General information
7	(Un)loading area

8	Communication equipment
11	Portaberm (if applicable)
13	Structural integrity of containers
14	Covers/lids of containers
15	Warning signs
16	Labels
20	Security
21	Site lighting
22	Secondary containment structures
23	Container segregation and 2-foot aisle space
24	Hose bibs, water supply (if applicable)
25	Storage shed (Area L only)
26	Work/road surfaces
27	Wind sock (if applicable)
28	Shaft cover and rail (Areas L and G only)
29	Pallets (if applicable)
31	Refrigerator (Area L only)
32	Spill control, fire, safety, and emergency equipment, including SCBA
39 - 45	General information

B.3.3 INSPECTION RECORDS

The original of each inspection record will be placed in an inspection logbook and maintained for three years by the operating group that has responsibility for that hazardous waste unit. A copy of each inspection record will be sent at the end of each work week to EM-8 for placement in their files.

B.4.0 TANKS - SCHEDULED INSPECTIONS

Each hazardous waste storage and treatment tank listed in Table B-1 is inspected according to the schedule summarized in Table B-2. The inspection schedule for the tanks at Area L differ from the that of the Batch Waste Treatment Unit. A description of inspection schedule for the Batch Waste Treatment Unit follows that of the Area L tanks inspection schedule below.

B.4.1 DAILY

The inspection items in the following blocks on the IRF will be addressed at least once each operating day for the tank systems (including ancillary equipment):

Block Number	Item(s)
1 - 5	General information
7	(Un)loading area
9	Above-ground portions of tank systems to detect corrosion or releases of waste, overfill/spill control equipment, tank monitoring and leak detection systems, and data from these systems
12	Eye wash/safety shower
13	Structural integrity of tank
22	Secondary containment structures
32	Spill control, fire, safety, and emergency equipment
39 - 45	General information

B.4.2 WEEKLY AND AFTER STORMS

The tanks will be inspected weekly and after storms. Weekly inspection requirements for tank systems, will be completed on the first working day of each week. In addition, after storms the tanks will be inspected for these same items. Include the items in the following blocks on the IRF:

Block Number	Item(s)
1 - 5	General information

7	(Un)loading area
8	Communication equipment
9	Above-ground portions of tank systems to detect corrosion or releases of waste, overfill/spill control equipment, tank monitoring and leak detection systems, and data from these systems
13	Structural integrity of tank
15	Warning signs
16	Labels
20	Security
21	Site lighting
22	Secondary containment structures
24	Hose bibs/water supply (if applicable)
26	Work surfaces
30	Proper operation/leaks of treatment tanks
32	Spill control, fire, safety, and emergency equipment
39 - 45	General information

B.4.3 ANNUALLY

An annual inspection of the Area L tank shells and liners is conducted to identify thin spots or excessive corrosion. Section B.4.4 outlines the procedures to be used for cleaning and testing the tanks. The inspection results will be maintained in the permanent operating record.

B.4.4 ANNUAL INSPECTION PROCEDURE

Prior to the annual inspection, the tanks must be emptied following standard procedures. After the tank is emptied the liner is removed and the tank thoroughly cleaned and checked to be sure it is free of flammable, toxic, and corrosive vapors and materials before empty. If this requires steaming, the tank must be cooled after cleaning, and the rinse water checked to be sure it is essentially neutral. Any nearby operations considered hazardous to tank entry will be shut down. The atmosphere in the tank must be tested for the presence of

combustible or toxic vapors and from oxygen content, and the tank must be isolated blocking off all lines before entry. Agitators must be fixed so they cannot be started by locking disconnecting wires, etc. Either a blower that provides a minimum of 12 air changes/hour, an air mask or air pack must be used. A ladder a harness, and lifeline, and means of removing an unconscious person are required. A sufficient number of standby men must be present to give aid in case of trouble. Low voltage lighting or approved flashlights should be used. Protective clothing or equipment may be required in some instances. The liners will be tested for pinholes, cracks, or other failures using a Holiday Detector® spark test or equivalent. The Holiday Detector® works by sweeping an electrically charged brush over the liner surface. If a pinhole or crack is present, the liners no longer insulates the metal tank from the current, and a spark is produced, thus identifying the failed surface. The tank and liner wall thickness will also be acoustically analyzed to determine the extent of deterioration (ASME NDT Section IX). The acoustic analysis utilizes the travel time or changes of wall thickness.

B.4.5 INSPECTIONS OF THE BATCH WASTE TREATMENT UNIT

When the Batch Waste Treatment Unit is operating, an operating log will be completed by the process operator. This log is a record of operating conditions and provides evidence that the operator has checked and is aware of the operating status of the system. The time at which entries are made and the actual instrument reading for each variable will be entered into the log. When shutdown occurs, the log will state the nature of the shutdown, the time it occurred, and the suspected cause. Once each shift, the shift supervisor will inspect the facility for malfunctions, deterioration, operator error, and discharges.

When waste is present, the Batch Waste Treatment Unit will be also be inspected on a daily and weekly basis for the same items as the Area L tanks as the items are listed in Sections B.4.1 and B.4.2. The unit will also be inspected for damage due to corrosion or erosion every three years using the method described in Section B.4.4 for annual inspection of the Area L tanks. If the liner wall exhibits considerable (unexpected) thinning , the inspection frequency will be increased to annually. The inspection results will be maintained in the permanent operating record.

B.4.6 ACTIONS RESULTING FROM EMERGENCIES

If leakage, corrosion, overflow or any other damage is detected in the treatment tanks, the contents will be pumped into a drum or another treatment tank. At least 33 empty drums should always be available to hold the maximum amount of liquid in a treatment tank in the

unlikely event that the tank is completely full and the contents cannot be pumped into another treatment tank. The portable pumps used for emptying the tank are the same pumps used to draw down the tanks and have adequate capacity to fill 55-gallon drums. The pumps and hose used are compatible with the hazardous wastes they handle and are decontaminated after use by flushing with water. The wash water is handled as hazardous waste. The pumps are located at TA-54, Area L.

B.5.0 CONTROLLED AIR INCINERATOR - SCHEDULED INSPECTIONS

The controlled air incinerator and associated storage units at TA-50-37 are routinely inspected for potential problems with safety and emergency equipment, security devices, containers, container storage facilities, and loading and unloading facilities. The incinerator is inspected hourly and daily when operating and weekly whether operating or not. Inspections of specific equipment and systems are conducted with a frequency appropriate to operations, as well as appropriate to the equipment and systems. Potential problems include containment failure, fire, explosion, equipment deterioration or malfunction, and leaks from the incinerator.

B.5.1 FREQUENCY AND CONTENT OF INSPECTION

The controlled air incinerator, associated storage areas, and emergency equipment are inspected according to the schedule outlined below and summarized in Table B-2.

B.5.1.1 Hourly Inspections

When the incinerator is operating, standard operating procedures require that process operators walk through their operating areas each hour to visually observe, monitor, and record leaks, spills, malfunctions, or other unusual conditions. The walk-through inspection and actions taken will be annotated on the operating log.

B.5.1.2 Daily

When the controlled air incinerator is operating, the items in the following blocks on the IRF will be addressed:

Block Number	Item(s)
1 - 5	General information
7	(Un)loading area
8	Communication equipment
9	Above-ground portions of tank system, tank monitoring equipment, leak detection, tank level alarm
12	Eye wash/safety shower
13	Structural integrity
22	Secondary containment structures

33	Incinerator emergency waste feed cutoff, shutdown controls, and system alarms
34	Incinerator pump valves, pipes, monitoring controls
38	Radiation safety
39 - 45	General information

B.5.1.3 Weekly

The incinerator will be inspected weekly, whether operating or not, on the first working day of each week. The items in the following blocks on the IRF will be addressed:

Block Number	Item(s)
1 - 5	General information
7	(Un)loading area
8	Communication equipment
9	Above-ground portions of tank system, tank monitoring equipment, leak detection
12	Eye wash/safety shower
13	Structural integrity
14	Covers/lids of containers
15	Warning signs
16	Labels
20	Security
21	Site lighting
22	Secondary containment structures
23	Container segregation/aisle space
26	Work/road surfaces (this includes inspecting the process floor for cracks, spalling, coating)
32	Spill control, fire, safety, and emergency equipment, including SCBA gear

33	Incinerator emergency waste feed cutoff, alarms, shutdown equipment (includes tank level alarm)
34	Incinerator pump valves, pipes, monitoring controls
38	Radiation safety
39 - 45	General information

B.5.2 INSPECTION RECORDS

General inspections are conducted by the operating group according to checklists associated with the operating log. Results of the inspection, the inspector's name and title, and date and time of the inspection are recorded on the IRF and maintained by the operating group for three years. A copy is sent to EM-8 for placement in their files. In addition, process operators will fill out process data sheets associated with the operations. These sheets are a record of operating conditions and provide evidence that the operator has checked and is aware of the operating status of the system. The time at which entries are made and the actual instrument reading for each variable will be recorded on each checklist. When shutdown occurs, the log will state the nature of the shutdown, the time it occurred, and the suspected cause. Once each shift, the shift supervisor will inspect the facility for malfunctions, deterioration, operator error, and discharges. The time, inspector's name, and results of this inspection will be entered on the operating log. Prestarting inspection procedures, general inspection checklists, and the operating log will be kept at the incinerator complex during operations.

B.5.3 ACTIONS RESULTING FROM INSPECTIONS

If any defects, deterioration, damage, or potential hazards are discovered during inspection, appropriate action, which may include repairs, maintenance, and replacement, will be completed as soon as practical to preclude further damage and prevent the need for emergency repairs. Any action taken in response to an inspection will be noted on the operating log. If a hazard is imminent or already exists, the incinerator will be shut down and emergency action will be initiated immediately, as specified in the "RCRA Interim Status Contingency Plan." The incinerator will not be used until remedial action is complete.

B.5.4 ACTIONS RESULTING FROM EMERGENCIES

Should containment failure, fire, explosion, or exposure occur, the incinerator will be shut down by the operator. Failure of the High Efficiency Particulate Air (HEPA) filtration system or wet scrubbers, equipment deterioration or malfunction, or leaks from the waste incinerator

will be remedied during and following process shutdown. The process operator will assess the situation and decide which shutdown procedure will be most expeditious and efficient. The operator will supervise the operating area during the shutdown process. Shutdown procedures are found in the Contingency Plan.

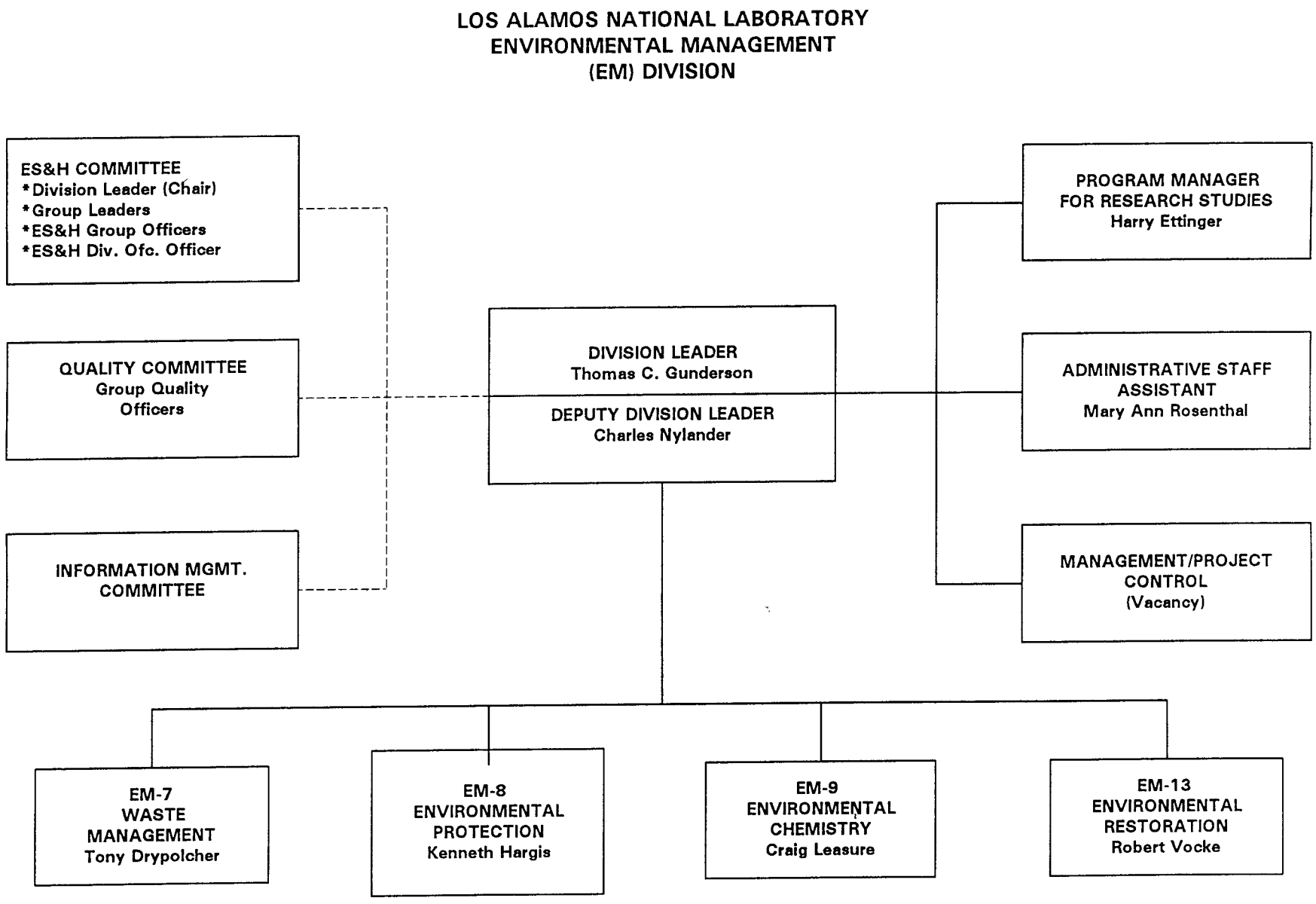

FIGURE B-1. ENVIRONMENTAL MANAGEMENT ORGANIZATION CHART

TABLE B-1

Hazardous Waste Storage and Treatment Units at Los Alamos National Laboratory

Container Storage Areas
TA-50-1, Batch Waste Treatment Unit Curbed Bay
TA-50-37, Room 117
TA-50-114
TA-50-137
TA-50-138
TA-50-139
TA-50-140
TA-54, Area L
TA-54-31
TA-54-32
TA-54-68
TA-54-69
Tanks
TA-50-1, Batch Waste Treatment Unit
TA-54-35, Area L Tanks (Treatment and Storage) (4)
Incinerators
TA-50-37, Controlled Air Incinerator
TA-16 Industrial Incinerator

TABLE B-2

Inspection Schedule for Each Type of Hazardous Waste Unit
(All Inspection Requirements Apply When Waste Is Present at the Unit)

Unit Type	Inspection Record Form
Container Storage Areas	
DAILY for areas subject to spills and when new containers of hazardous waste are placed in storage area	Blocks 1-5, 7, 13, 14, 16, 22, 23, 39-45
WEEKLY	Blocks 1-5, 7, 8, 11, 12, 13, 14, 15, 16, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 31, 32, 39-45
Tanks	
DAILY	Blocks 1-5, 7, 9, 13, 22, 32, 39-45
WEEKLY	Blocks 1-5, 7, 8, 9, 12, 13, 15, 16, 20, 21, 22, 24, 26, 30, 32, 39-45
AFTER STORMS	Blocks 1-5, 7, 8, 9, 12, 13, 15, 16, 20, 21, 22, 24, 26, 30, 32, 39-45
ANNUALLY	Special Report
Incinerator	
HOURLY when operating	Operating log entry
DAILY when operating	Blocks 1-5, 7, 8, 9, 12, 13, 22, 33, 34, 38, 39-45
WEEKLY	Blocks 1-5, 7, 8, 9, 12, 13, 14, 15, 16, 20, 21, 22, 23, 26, 32, 33, 34, 38, 39-45
Batch Waste Treatment Unit Tank	
Once per shift when treating waste	Log entry
DAILY	Blocks 1-5, 7, 9, 13, 22, 32, 39-45
WEEKLY	Blocks 1-5, 7, 8, 9, 12, 13, 15, 16, 20, 21, 22, 24, 26, 30, 32, 39-45
TRIENNIALLY	Special Report

ATTACHMENT B-1

Hazardous and Mixed Waste Facility
Inspection Record Form

HAZARDOUS AND MIXED WASTE FACILITY INSPECTION RECORD FORM

1 FACILITY	2 ☐ <90 DAY, GENERATOR STORAGE ☐ TREATMENT, STORAGE, DISPOSAL	3 START DATE	4 END DATE

5 ☐ Containers ☐ Landfill ☐ Surface Impoundment ☐ Waste Pile ☐ Thermal Treatment ☐ Chem/Phys/Bio. Treat.

☐ Incinerator ☐ Misc. Unit ☐ Tank ☐ UST ☐ Land Treatment ☐ Underground Inj.

PART I - Enter condition of item inspected (OK or AR*) in column for day inspected.

ITEM	INSPECTED FOR	SUN	MON	TUE	WED	THU	FRI	SAT
6 NO USE	CHECK IF NO WASTE IS PRESENT							
7 (UN)LOADING AREA TANKS/CONTAINERS	SPILLS AND DETERIORATION							
8 COMMUNICATION EQUIPMENT (PHONE/RADIO/ALARMS)	PROPERLY FUNCTIONING							
9 TANKS (ALL ABOVE GROUND PORTIONS) MONITORING DATA	DISCHARGE CONTROLS CONDITION, LEAKS, LEVEL (6" FREEBOARD), CORROSION							
10 SURFACE IMPOUNDMENTS AND CONTAINMENT	FREEBOARD (2 ft) SUDDEN DROPS IN LEVEL							
11 PORTA BERM	LEAKS CONDITION							
12 EYE WASH SAFETY SHOWERS	LEAKS, FUNCTIONING							
13 STRUCTURAL INTEGRITY OF CONTAINERS/TANKS, VALVES, PIPES, AND FLANGES	DETERIORATION AND LEAKS, CORROSION, DAMAGE							
14 COVER/LID OF CONTAINERS	CLOSED AND SECURED							
15 WARNING SIGNS	POSTED & READABLE (BILINGUAL)							
16 LABELS	"HAZARDOUS WASTE" PRESENT ON ALL CONTAINERS/TANKS							
17 ACCUMULATION START DATE (<90 DAY STORAGE)	PRESENT ON ALL CONTAINERS, TANKS, NONE EXCEED 90 DAYS							
18 RUN ON/OFF CONTROL (AREA L, G, H, P) LANDFILLS, DETONATION PADS	INTEGRITY, EROSION PONDING							
19 COVER INTEGRITY (AREA L, G, H, P) LANDFILLS	EROSION, SUBSIDENCE WATER INTRUSION							
20 SECURITY	CONDITION, FENCE/GATES/LOCKS							
21 SITE LIGHTING	FUNCTIONS PROPERLY							

ITEM	INSPECTED FOR	SUN	MON	TUE	WED	THU	FRI	SAT
22 CONTAINMENT STRUCTURES	INTEGRITY, STANDING WATER VEGETATION, EROSION							
23 MANAGEMENT OF CONTAINERS	SEGREGATED ACCORDING TO COMPATIBILITY, 2 FT AISLE SPACE							
24 HOSE BIBS, WATER SUPPLY	LEAKS, FUNCTIONING							
25 STORAGE SHED (AREA L)	FLOOR DAMAGE, LIQUID							
26 ROAD/WORK SURFACES	CRACKS/POTHOLES							
27 WIND SOCK	DAMAGE, FUNCTIONING							
28 SHAFT COVER AND RAIL	PRESENT, DAMAGE							
29 PALLETS	INTEGRITY, DAMAGE							
30 TREATMENT TANKS	PROPER OPERATION, LEAKS							
31 REFRIGERATOR	DAMAGED CONTAINERS							
32 SPILL CONTROL, FIRE, AND EMERGENCY EQUIPMENT	PRESENT, AND IN GOOD WORKING ORDER							
33 INCINERATOR EMERGENCY WASTE FEED CUTOFF/ALARMS	PROPER OPERATING CONDITION OF ALL SHUTDOWN CONTROLS							
34 INCINERATOR PUMPS VALVES, PIPES. MONITORING CONTROLS	LEAKS/SPILLS/TAMPERING OPERATING WITHIN SPECS.							
35 PRESSURE VESSELS (S-SITE)	DETERIORATION AND SAND CONDITION							
36 OIL BURN PANS (S-SITE)	DETERIORATION & LEAKS							
37 HE BURN PADS (S-SITE)	DETERIORATION VEGETATION, SAND COND., EROSION							
38 RADIATION SAFETY	SIGNS, MONITORING ($\alpha\ \beta\ \gamma\ ^3H$)							
39 DATE	DATE OF INSPECTION							
40 TIME	TIME OF INSPECTION							
41 INSPECTOR	INITIALS OF INSPECTOR							

PART II - For any AR (Action Required) in PART I above, describe below: action required, action taken, date of action. Attach additional sheets if necessary.

42 INSPECTOR	43 GROUP	44 DATE	45 TIME

Part I

1. FACILITY: Location information including Technical Area (TA), building, and room if applicable. Other location descriptors may be necessary. (e.g., TA-59-3-114 or TA-59-1-S. Dock)

2. <90 Day, Generator Storage should be checked if this location is intended for operation in accordance with generator requirements for storage of hazardous waste for less than 90 days.

   Treatment, Storage, Disposal should be checked if this location is listed in LANL's Hazardous Waste Facility Permit or Part A Application as a permitted or interim status TSD operation.

3. START DATE: The date of the first inspection for the week on that inspection sheet. (Usually the first working day of the week)

4. END DATE: The date of the last inspection for the week on that inspection sheet. (Usually the last working day of the week, however, if handling of hazardous waste occurs during the weekend inspections must be conducted.)

5. Check the appropriate box for the type of operation. Several boxes may be checked if necessary for those locations where inspections are combined on a single sheet. You must have prior approval from EM-8 to combine inspections for more than one unit.

6. NO USE: May be checked if the unit did not store, treat, dispose, or otherwise handle hazardous waste for the day/week in question. The individual responsible for the inspection must then only complete boxes 39, 40, 41 for that day/week. If any hazardous waste is subsequently placed at the site for any reason, a full inspection must be performed immediately, and every working day thereafter until all waste is properly disposed of.

7. Loading and unloading areas must be inspected daily when in use for signs of damage or deterioration that may lead to an accident or spill. This includes asphalt pads, and areas where containers or tanks are handled or contents thereof are transferred.

8. Communication equipment: Includes all telephones, two-way radios, and alarms for the area being inspected. Consult with EM-8 to determine what equipment is necessary at any particular location.

9. For tanks systems used for treatment or storage of hazardous waste, all above ground portions of the tank system, including any and all ancillary plumbing, must be inspected daily for signs of leaking, corrosion, deterioration, or improper operation. Tanks must be operated with a minimum freeboard of 6 inches. If the tank system includes discharge controls, overtopping controls, tank level alarms, or other monitoring equipment including leak detection equipment, all controls and relevant data must be checked to ensure they are operating properly and that operation is within design specifications for the system.

10. Surface impoundments must be operated with a minimum of 24 inches (60 cm) of freeboard from the top of the dike or berm to the surface of the waste therein. Inspectors must look for signs of leaks, deterioration, and erosion of dikes and berms, and any associated plumbing or valves. These could include dying vegetation, gullies and sudden changes in level.

11. For those locations where inflatable "Porta-Berms" are used as secondary containment for tanks and containers of hazardous waste, inspectors must ensure that they are adequately inflated. Inspectors must also check for the presence of liquids in the containment unit which could indicate leaks or spills of hazardous waste. All monitoring and leak detection systems must also be checked.

12. Where required, eye-wash and safety showers must be inspected to ensure proper operating condition. Outside locations must be checked for freezing.

13. All containers and tanks must be checked for structural integrity, leaks, corrosion, or damage. This item includes checking condition of all construction materials, fixtures, seams, and auxiliary equipment. See 9 above.

14. All tanks and containers used for treating or storing hazardous waste must have the cover or lid securely in place. Containers are not considered to be closed unless the lid/cover is fastened in the manner the manufacturer originally intended.

15. Required signs must be readable and prominently posted. TSD facilities and <90 day storage areas must be equipped with bilingual (english/spanish) signs with the legend "DANGER UNAUTHORIZED PERSONNEL KEEP OUT." TSDs must be identified with signs that read "HAZARDOUS WASTE STORAGE AREA." <90 day storage areas must be identified with a sign with the legend "<90 DAY HAZARDOUS WASTE STORAGE AREA."

16. All containers and tanks must be labeled with the words "HAZARDOUS WASTE" and with other words that identify the contents. Mixed waste must also be labeled as "RADIOACTIVE."

17. All containers and tanks of hazardous waste in TSDs or <90 day storage areas must be marked with the accumulation start date. At TSDs, containers without dates must be dated when they arrive at the facility. At <90 day storage areas, containers must be marked with the accumulation start date at the time the container first receives any waste. For <90 day storage areas, no containers may exceed 90 days from accumulation start date to the time they are delivered to a permitted treatment, storage, or disposal unit. Transportation is by EM-7 or its representatives only.

18. Landfills and detonation pads must have run-on and run-off controls inspected wherever present. Leachate collection systems, where present, must also be inspected. Items to be inspected for are proper operating condition, damage, erosion, contaminant migration, ponding, etc. Detonation pads must be inspected for unburned or undetonated explosives, ordnance and debris.

19. Landfill covers must be inspected at least weekly and after storms for evidence of erosion, subsidence, and water intrusion.

20. Site security must be verified. Items such as fences, gates, locks, etc. should be checked for proper condition and adequacy.

21. Site lighting must be adequate to prevent accidents related to hazardous waste operations and for any other night operations that may take place within the boundaries of the hazardous waste unit.

22. Secondary containment structures for hazardous waste operations must be inspected to verify proper operating condition and to ensure adequate capacity. Structures must also be inspected for the presence of standing water or hazardous waste. For incinerators and certain operations at TA-55, secondary containment includes inspections of gloves and gloveboxes, hoods, and ventilation systems where necessary.

23. All hazardous waste containers holding materials that may be incompatible with any other materials at that location must be separated from those materials by dikes, berms, or other physical barriers to prevent a possible reaction. All containers of hazardous waste must be stored in a manner that ensures a minimum of 2

feet of aisle space between containers. Drums containing free liquids or those holding hazardous waste (excluding mixed wastes) may not be stacked over two high.

24. TSD facilities must have water at adequate volume and pressure for fire protection available. Hose bibs should be inspected for proper operating condition and adequate pressure. Outside water supplies must be checked for freezing.

25. The storage shed at Area-L must be inspected for damage, free liquids that might indicate a leak, and chemical compatibility of materials stored therein.

26. Road and work surfaces, process floors, or other work surfaces at TSDs must be inspected for damage or erosion that could lead to a spill or accident, and for adequate secondary containment.

27. Wind socks, where required, at TSDs must be inspected to ensure that they are present and in proper operating condition.

28. Disposal shafts and shafts used for retrievable storage should have their covers securely in place and guard rails must be installed and in good condition.

29. Hazardous waste containers at TSDs and <90 day storage areas must be stored on pallets if they are stored outside without a roof.

30. Hazardous waste treatment tanks must be operated within design specifications and in accordance with SOPs and Work Plans. Tanks must be inspected for leaks or damage prior to operation.

31. Refrigerators used for storing hazardous waste, or samples thereof, must be inspected for proper operating condition and leaking or damaged containers.

32. Hazardous waste TSDs and <90 day storage areas must have adequate fire and spill control equipment for the types and volumes of waste present. Equipment must be present, in good working order, and appropriate for the material in question.

33. Incinerator waste feed cutoffs, emergency shutdown controls, and associated alarms or warning systems must be inspected for proper operating condition.

34. Incinerators, ancillary plumbing and equipment, and all monitoring controls must be inspected to ensure that they are in proper operating condition, and are being

operated within design specifications. Inspectors must also look for evidence of leaks, corrosion, spills, or tampering.

35. Pressure vessels must be inspected for signs of deterioration or damage. Condition of the sand and loading must also be checked to ensure adequacy.

36. Oil burn pans must be inspected for deterioration, damage, or leaks. Inspectors must also inspect for unburned explosives and debris.

37. HE burn pads must be inspected for deterioration, damage, leaks, or vegetation that could catch fire. Condition of the sand must also be checked. Inspectors must also inspect for unburned explosives and debris.

38. Radioactive materials must be properly placarded, labeled, and stored within controlled areas in accordance with AR 3-7. Containers should be monitored/swiped for outside contamination if suspected and all leaks or spills must be monitored to ensure adequate cleanup.

39. Inspectors will record the date of the current inspection.

40. Inspectors will record the time of the current inspection.

41. Inspectors will initial each daily inspection.

Part II

Inspectors must explain in detail, any deficiency noted above. Items to be included are: Type of problem, any action taken, and the date/time of the action. Additional sheets may be attached as necessary.

42. Signature of individual performing inspection.

43. Organization responsible for this location.

44. Date record was signed and completed.

45. Time record was signed and completed.

ATTACHMENT C

PERSONNEL TRAINING

MODIFICATION SUMMARY:

Proposed Modification Class - 1

Class Citation - 40 CFR Appendix I to § 270.42, B.5.b

Summary of Changes -

The proposed modifications to the Personnel Training Plan will allow these activities to be carried out more effectively and in accordance with current practices, administrative policies, and operations at Los Alamos National Laboratory.

Redline/strikeout conventions are used to indicate additions and deletions from the existing text, respectively. The majority of changes are simple clarifications in language used to describe the training program, or reflect changes in organizational titles or affiliations. Job descriptions included in the original personnel training plan are removed from the proposed training plan, however, as required by HWMR-7, 40 CFR § 264.16(d), job descriptions, and training requirements for each position involving hazardous waste management at Los Alamos National Laboratory will be maintained at the facility.

Overall, the proposed modifications to the Personnel Training Plan will improve the efficiency and effectiveness of the Laboratory's training program, thereby enhancing the ability of hazardous waste management personnel at the Laboratory to insure safe and protective work practices.

ATTACHMENT C

PERSONNEL TRAINING

PERSONNEL TRAINING
PERMIT ATTACHMENT C
NM0890010515-1

C.1.0 INTRODUCTION

This attachment describes the personnel training program for Los Alamos National Laboratory (the Laboratory) in accordance with the regulatory requirements of New Mexico Hazardous Waste Management Regulations, Revision 7 (HWMR-7), Part V, section 264.16. ~~The information presented outlines the personnel training programs at the Laboratory.~~ The primary objective of the training program is to prepare persons to safely operate and maintain those areas ~~containing~~ handling hazardous wastes. This training program applies to all employees of the U.S. Department of Energy (DOE), the University of California, ~~Pan American Worldwide Services (PAWS),~~ and their contractors who regularly work at the facility and who handle or generate hazardous waste. The degree of training varies with the duties, but all such personnel receive, at a minimum, an introduction to the Resource Conservation and Recovery Act (RCRA) requirements of this permit ~~a minimum of Sections I and II of the training outline, Figure C-1~~.

C.1.2 HAZARDOUS WASTE MANAGEMENT RESPONSIBILITIES

~~Figure C-2 presents the organization of Health, Safety, and Environment (HSE) Division.~~ The organizational structure of the Environmental Management (EM) Division is presented in Figure C-1. ~~HSE~~ EM Division ~~handles~~ is responsible for all waste management activities except for high explosives treatment, which is handled by the Design Engineering (WX) and Dynamic Testing (M) Divisions. Individuals who are directly involved with waste management activities are in ~~Health, Safety, and Environment Group 7 (HSE-7)~~ the Waste Management Group (EM-7). ~~PAWS~~ Johnson Controls World Services Inc. (JCI) provides trained personnel to assist ~~HSE-7~~ EM-7 in waste handling activities. The Environmental ~~Surveillance~~ Protection Group (EM-8) is responsible for RCRA compliance. Health and Safety (HS) Division personnel in the Occupational Medicine (~~HSE-2~~ HS-2), ~~Safety Group (HS-3)~~ Risk Management Support (HS-3), and Industrial Hygiene and Safety (~~HSE-5~~ HS-5) Groups and personnel in the ~~Environmental Surveillance Group (HSE-8)~~ Environmental Protection (EM-8) Group are trained in their specialties to provide emergency response support. Security, traffic control, and site access control are provided by Protection Technology Los Alamos (PTLA). The Emergency Management Office (EMO) provides emergency planning and response at LANL, and has the overall responsibility for LANL's Emergency Response Plan training.

C.2.0 TRAINING CONTENT, FREQUENCY, AND TECHNIQUES

The training program instituted at the Laboratory includes a combination of internal training courses, on-the-job training, and courses taught by ~~outside contractors~~ laboratory contractors. Each of these types of training is described in Sections 2.1 through 2.4.
~~Records of each waste handling individual's formal training are maintained in the HSE Division office.~~ Records of formal training for each individual who handles hazardous waste are maintained in the HS-3 training office, or in their respective section offices. Training records of current employees are ~~kept~~ maintained until closure of the facility. Training records ~~of~~ for former employees are kept for at least three years from the date the employee last worked at the facility.

The training outline (Figure C-2) is on file in the ~~HSE~~ HS Division Office and is available for review by all hazardous waste management and handling personnel, emergency response personnel, and all regulatory agencies. Course content will be reviewed annually and updated as required to ~~maintain currency with~~ meet RCRA requirements.

~~The training coordinator will work with the group leaders of HSE-2, 3, 5, 7, and 8, WX and M-Divisions, and PAWS to ensure that all employees receive the proper level of training.~~

All new LANL and ~~PAWS~~ JCI employees will receive the appropriate level of training within six months of their date of hire or transfer. Personnel will not work in unsupervised positions until they successfully complete the ~~training course~~ appropriate level of training for their position and responsibilities.

C.2.1 INTERNAL TRAINING

The personnel training courses emphasize personnel safety and the safe handling of hazardous wastes. Program instructors are trained in hazardous waste management procedures and RCRA provisions. The training program is designed to provide training which is appropriate for the employee's responsibilities. All employees will receive Section I and II training (Figure C-1), regardless of their duty assignment. Employees who handle hazardous waste, clean up spills or releases of hazardous waste, and supervisors of these employees receive instruction on the appropriate topics listed in Figure C-1. Additionally, employees who conduct inspections of hazardous waste units and those responsible for preparing paperwork that must be used for the transport, treatment, or storage of hazardous waste receive training, as necessary, listed in Figure C-2.

C.2.2 ON-THE-JOB TRAINING

All ~~waste handler personnel~~ personnel handling hazardous waste will participate in on-the-job training programs. These programs are designed to give field demonstrations of Laboratory procedures for hazardous waste handling, inspections, and transportation requirements. Personnel responsible for directing on-the-job training participate in the RCRA provisions course ~~so that they are~~ to become familiar with hazardous waste management procedures ~~as they related to~~ required by RCRA.

C.2.3 EXTERNAL TRAINING

In addition to internal training, selected personnel will participate in contractor-taught courses. ~~Those personnel who will participate in the external training program training program are listed herein.~~ These contractor-taught courses will serve to supplement the internal training program.

C.2.4 TRAINING COORDINATOR

The personnel training program is directed by ~~Dr. Thomas C. Gunderson. As Associate Division Leader for the HSE Division,~~ the EM Division Leader, ~~Dr. Gunderson~~ who is knowledgeable about hazardous waste management facilities, practices, and emergency procedures. ~~Dr. Gunderson~~ The EM Division Leader is responsible for coordinating the internal and external training courses and for assuring that all personnel receive the required training. ~~The training program provides employees with training relevant to their positions within the organization. Supervisors and staff receive training appropriate to their degree of handling hazardous waste (e.g., reporting and other procedures required for compliance). For example,~~

~~management responsibilities for compliance with RCRA are assigned to the HSE-7 Group Leader, who receives training in RCRA provisions. Material handlers are trained to maintain proper and safe operating procedures and to respond effectively to spills and other emergencies. Duties for each job description are matched to a LANL training course.~~

C.3.0 EMERGENCY RESPONSE TRAINING

~~The outside professionals (PAWS and the Protective Force) assist the Hazardous Waste Emergency Coordinator (HWEC) as soon as they arrive on the scene of the emergency. These people are trained in their specialties (i.e. heavy equipment operation, traffic control). PAWS personnel are also trained in personal safety. At all times during an emergency, these contractors are under the direct supervision of the HWEC and other trained Laboratory personnel. All actions taken by contractors do not perform activities other than those for which they are trained (heavy equipment operations, constructing dikes).~~

If called upon by the Emergency Management Office (EMO), ~~the outside professionals (~~JCI and the PTLA Protective Force~~)~~ assist the LANL Emergency Manager (Incident Commander) at the scene of a hazardous waste emergency. These professionals are trained in their specialties (e.g., heavy equipment operation, traffic control, security). JCI personnel are also trained in personal safety. At all times during an emergency, these contractors are under the direct supervision of the Emergency Manager (Incident Commander) and other trained Laboratory personnel.

In order to ensure maximum protection of life and property and to mitigate the consequences of an emergency situation, it is imperative that all ~~HSE~~ HS and EM personnel, WX and M Division personnel, and ~~PAWS~~ JCI personnel involved in waste handling and emergency response be knowledgeable about appropriate building and operating area emergency procedures. To satisfy this requirement, these groups will participate in the Laboratory's ~~formal~~ emergency response training program.

~~In addition to the Laboratory's formal program,~~ Division and group leaders and immediate supervisors are responsible for ~~providing~~ ensuring that education and training in site-specific emergency response procedures and in the Laboratory's emergency response program are provided. Training in site-specific emergency response procedures is given by the operating group and the EMO provides training for implementation of the Laboratory's emergency response plan. Periodic unannounced emergency drills and exercises are used to familiarize employees with emergency procedures. Training is also provided through prominent instruction displays and through presentations and discussions in safety meetings.

Each new or transferred employee is indoctrinated by ~~his~~ an immediate supervisor regarding the RCRA requirements ~~which~~ that apply to his job related activities, and the general emergency procedures and ~~those~~ other specific procedures related to his work area. ~~Each employee is advised of changes to any emergency procedures and is given an annual review of procedures affecting his work area. The review may be given separately in writing or included in an overall indoctrination. A record of training will be kept in the employee's personnel file.~~ The immediate supervisor also advises each employee of changes to any emergency procedure. An annual refresher of procedures affecting the work area and applicable RCRA requirements is given by EM-8. A record of training will be kept in the sponsoring organization's office file or at the HS-3 training office.

Specialized training is given to those employees assigned special functions of specific emergency duties. Emergency response personnel ~~(HSE-2,5,and 8, the DOE fire Department,~~

~~Laboratory Emergency Response Coordinators, and Chemical Waste Management Coordinators)~~ (e.g., HS-1, -2, -3, -5, and -12, EM-7 and -8, Emergency Managers/HAZMAT Team Members, Nuclear Materials Technology (NMT) Division, and Waste Management Coordinators) participate in the ~~formal Laboratory training program~~ Emergency Response Plan training program given by the EMO and are required to attend courses sponsored by EM-8 and HS-3 on spill response, implementation of the RCRA contingency plan, and ~~RCRA~~ OSHA emergency response provisions. All waste management and handling personnel ~~(HSE-7, WX and M Divisions, and PAWS)~~ in EM-7, WX and M Divisions, and JCI also participate in ~~the formal~~ a training program in which they are instructed in emergency procedures pertinent to their work area. This site-specific instruction is given by the operating group. The emergency procedures instruction in which hazardous waste management and handling personnel and emergency response personnel are required to participate will ensure a coordinated response to hazardous waste emergencies.

C.4.0 IMPLEMENTATION OF TRAINING PROGRAMS

~~The introductory training program is offered at six month intervals, when needed, to ensure that all employees receive training within six months of their date of hire or transfer. Employees will not work in unsupervised positions until they have been trained. Employees transferring within divisions of the facility will receive training as if they were new employees.~~

General Employee Training (GET) is the introductory training program that is conducted as part of the hiring process. GET includes, but is not limited to: Environment, Safety, and Health (ES&H) policy, OSHA rights and regulations, industrial safety, waste minimization, general radiation protection, industrial hygiene, emergency management, and fire protection. An Extended GET is given to all employees who will handle or be associated with hazardous waste. The Extended GET includes courses in hazard communications, waste generator training, and radiation worker protection. Employees attend any or all of these courses, as required, depending on the employee's position and job responsibilities. Employees will not work in unsupervised positions until they have been trained. Employees transferring within divisions of the facility will receive training commensurate with their new job description or assigned duties (Section C.2.0).

All hazardous waste management and handling personnel must attend annual refresher courses. These courses are intended to update personnel on Laboratory procedures and provide them with an overview of their introductory training.

In addition, ~~a complete respirator or self-contained breathing apparatus (SCBA) training course is taught annually, where appropriate, and~~ instruction and training in the use of respiratory protective equipment must be successfully completed by hazardous waste handling personnel. Annual refresher training is also required.

Group leaders, along with the training coordinator, will ensure that all their personnel participate in the introductory and annual training programs.

In addition to the GET training, a hazardous waste identification training course (Waste Generator Training) has been initiated at the Laboratory to assist waste generators in the waste identification process. Waste Generator Training is offered as part of the Extended GET. This course provides hazardous and mixed waste generators with the background needed to identify those wastes which are subject to RCRA regulations in 40 CFR Part 261. The training addresses the definition of hazardous waste and hazardous constituents

(including hazardous components in mixed waste) as well as how to identify hazardous waste and hazardous constituents.

LOS ALAMOS NATIONAL LABORATORY
ENVIRONMENTAL MANAGEMENT
(EM) DIVISION

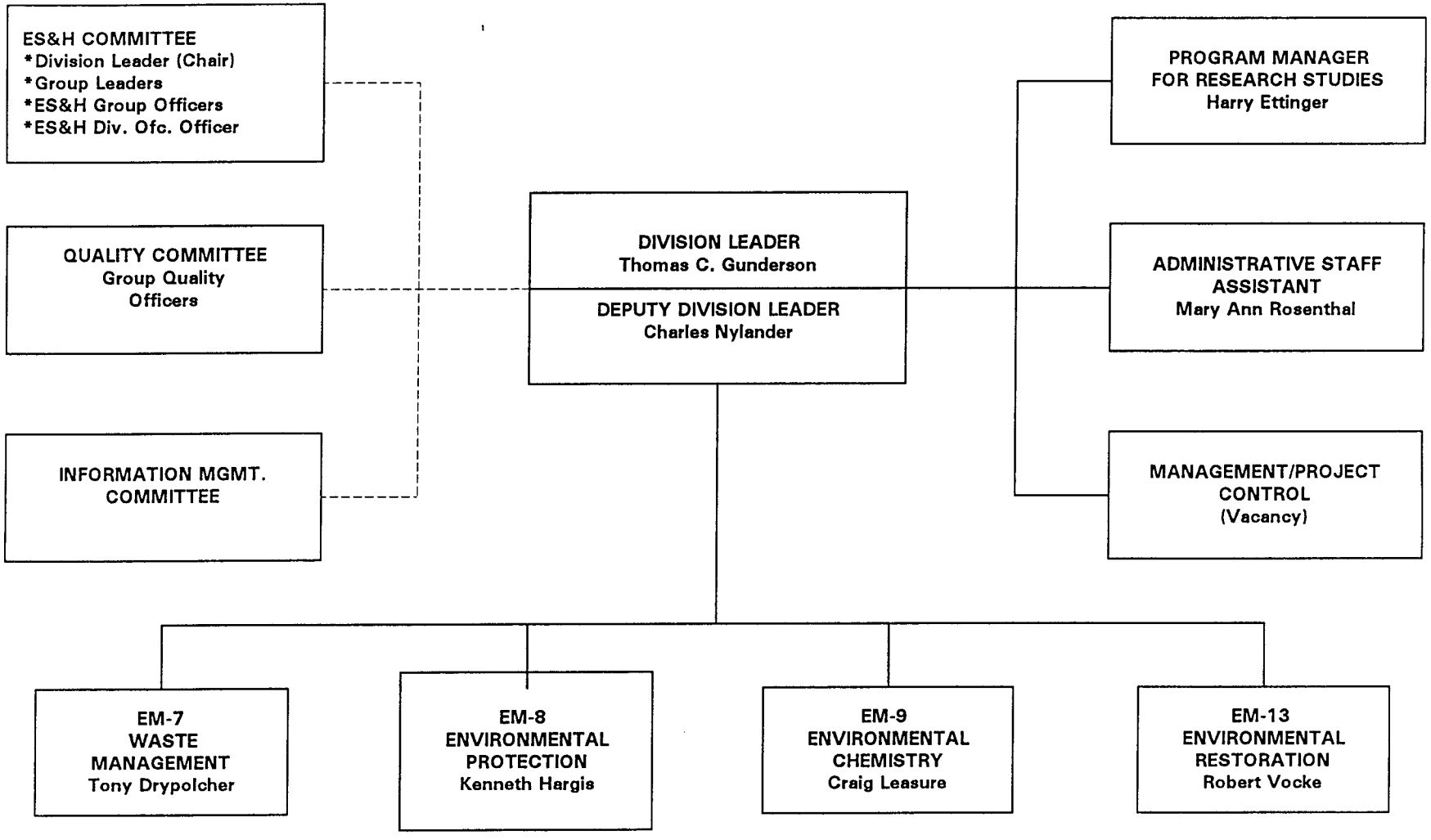

FIGURE C-1. ENVIRONMENTAL MANAGEMENT ORGANIZATION CHART

FIGURE C 2
OUTLINE OF LOS ALAMOS NATIONAL LABORATORY'S TRAINING PROGRAM

IC — internal classroom instruction
EC — external classroom instruction
OJT — on-the-job training

I. RCRA PROVISIONS

A. Legislation (Federal/State) - (IC, EC) introductory with annual update Brief overview of legislative mandates

B. Regulations (Federal/State) - introductory with annual update

1. Overview of 40 CFR §§ 260-265 (N.M. Hazardous Waste Regs. Parts I & II)
2. Overview of DOT shipping regulations
3. Familiarization with Los Alamos National Laboratory emergency response, recordkeeping

II. PERSONNEL HEALTH AND SAFETY

A. Familiarization with Standard Operating Safety Guidelines (IC)

B. Safe Handling of Chemicals (EC)

1. Explosive/fire hazards, chemical burns, chemical compatibility
2. Eye/skin hazards and protection
3. Respiratory hazards and protection

C. First Aid (IC) introductory, triennial recertification

D. CPR (IC) introductory, annual recertification

E. Use of H&S equipment

1. Safety showers, eyewashers
2. Fire extinguishers
3. Alarm system
4. Communication system

III. RESPIRATOR

A. Air-Purifying Devices (IC) introductory, annual

1. Use

a) Operation of device
b) Changing filters
c) Donning and taking off equipment
d) Safety features

2. Care and cleaning
3. Inspection
4. Fitting

B. Self-Contained Breathing Apparatus (IC) introductory, annual
1. Use
a) Operation of device
b) Changing compressed air bottles
c) Donning and taking off equipment
d) Safety features
2. Care and cleaning
3. Inspection
4. Fitting

IV. HAZARDOUS WASTE HANDLING AND OPERATIONS

A. Batch Waste Treatment (OJT) introductory with annual update
1. Familiarization of SOP
2. Familiarization of Operating Manual
3. Supervised Operation of Facility
4. Emergency Shutdown Procedures
5. Evacuation Procedures
6. Accidental Release Procedures
7. Familiarization with Emergency Equipment Use, Inspection, Repair, etc.
8. Use of Communication/Alarm System

B. Controlled Air Incineration (OJT) introductory with annual update
1. Familiarization of SOP
2. Familiarization of Operating Manual
3. Supervised Operation of Facility
4. Emergency Shutdown Procedures
5. Evacuation Procedures
6. Accidental Release Procedures
7. Familiarization with Emergency Equipment Use, Inspection, Repair, etc.
8. Use of Communication/Alarm System

C. Detonation/Burning HE (OJT) introductory with annual update
1. Familiarization of SOP
2. Supervised Operation of Facility

3. Emergency/Evacuation Procedures
4. Accidental Release Procedures
5. Familiarization with Emergency Equipment Use, Inspection, Repair, etc.
6. Use of Communication/Alarm System

D. Non-HE Reactive, Corrosives, Ignitables, Toxics
1. Chemical Hazards and Reactions (EC)
2. Emergency Procedures (OJT)
3. Accidental Release Procedures (OJT)
4. Emergency Equipment
5. Communication/Alarm System

V. RECORDKEEPING/INSPECTIONS (IC, EC, OJT) introductory

A. Use of Manifest System (on-site)

B. Operating Records

C. Reporting

D. Inspections
1. Facility
2. Operating Equipment
3. Safety/Emergency Equipment
4. Security System

VI. TRANSPORTATION (OJT) introductory

A. On-Site
1. Packaging
2. Placarding/Labeling
3. Manifesting/Recordkeeping
4. Internal Procedures
5. Waste Segregation

B. Off-Site
1. Packaging
2. Placarding/Labeling
3. Manifesting/Recordkeeping
4. Internal Procedures
5. Waste Segregation

Supervisors and staff receive training appropriate to their degree of handling hazardous waste (e.g., reporting and other procedures required for compliance). Material handlers are trained in the hands-on aspects such as maintenance of operating records, ~~plant~~ facility operation, and response to spills or other emergencies.

ATTACHMENT D

CONTINGENCY PLAN

MODIFICATION SUMMARY:

Proposed Modification Class - 2

Class Citation - 40 CFR Appendix I to § 270.42, B.6.a-d

Summary of Changes -

The proposed modifications to the Contingency Plan will allow more effective response to potential and real emergencies in accordance with the revised Los Alamos National Laboratory Emergency Response Plan.

The redline/strikeout conventions used to highlight proposed modifications to other sections of the permit have not been used in this case because the Contingency Plan has been reorganized relative to the existing Attachment D to the Permit.

The proposed Contingency Plan has been updated to include proposed new units (i.e. Barium Sands Truck-Mounted-Container Treatment System), newly acquired emergency response equipment, the current organizational and administrative structure of the Laboratory, and improved emergency response protocols and procedures. The information and practices contained in the proposed Contingency Plan will improve the responsiveness of emergency personnel to potential or real emergency situations, thereby enhancing protection of worker health and safety.

ATTACHMENT D

RCRA CONTINGENCY PLAN
FOR HAZARDOUS WASTE UNITS

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LIST OF ACRONYMS

ADO	Associate Director of Operations
CAS	Central Alarm Station
CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
EM	Laboratory Environmental Management Division
EOC	Emergency Operations Center
EMO	Emergency Management Office
EPA	U.S. Environmental Protection Agency
ERC	Emergency Response Coordinator
ERP	Laboratory Emergency Response Plan
HAZMAT Team	Hazardous Materials Response Team
HE	High Explosive
HS	Laboratory Health and Safety Division
HWMR	State of New Mexico Hazardous Waste Management Regulations
ICG	Incident Control Group
JCI	Johnson Controls World Services Inc.
LAAO	Los Alamos Area Office
LAFD	Los Alamos Fire Department
LAMC	Los Alamos Medical Center
LAPD	Los Alamos Police Department
M	Dynamic Testing Division
MAT	Materials Management Division
NAWAS	National Warning System
NMED	New Mexico Environment Department
OSHA	Occupational Safety and Health Administration
PA	Public Address
PTLA	Protection Technology Los Alamos
RCRA	Resource Conservation and Recovery Act
SOP	Standard Operating Procedure
TA	Technical Area
TSD	Treatment, Storage and Disposal
WX	Design Engineering Division

ATTACHMENT D
HAZARDOUS WASTE FACILITY CONTINGENCY PLAN

D.1.0 INTRODUCTION

This Attachment presents contingency measures for hazardous waste treatment and storage units at Los Alamos National Laboratory (the Laboratory). Contingency plan requirements are specified in 40 CFR Part 264 Subpart D, Contingency Plan and Emergency Procedures. This document is consistent with the Laboratory Emergency Response Plan (ERP), prepared by the Laboratory's Emergency Management Office (EMO). The ERP incorporates emergency planning and preparedness strategies from Department of Energy (DOE) Order 5500.3A, "Emergency Planning and Preparedness for Operational Emergencies." This Contingency Plan is intended to meet contingency plan and emergency procedure requirements set forth in 40 CFR Part 264 Subpart D for Resource Conservation and Recovery Act (RCRA) treatment, storage and disposal (TSD) facilities. The provisions of this plan will be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents that could threaten human health or the environment.

D.1.1 SITE DESCRIPTION

The Laboratory and the residential communities of Los Alamos and White Rock are located in north central New Mexico on the Pajarito Plateau, situated west of the Rio Grande on the eastern slopes of the Jemez Mountains. The Laboratory facility covers approximately 111 square kilometers (27,500 acres) in and adjacent to Los Alamos County, and includes 34 active Technical Areas (TAs).

The principal mission of the Laboratory is the application of science and technology to solve national problems including weapons development, energy supply, and conservation programs, while basic scientific research complements and strengthens its fundamental technical capabilities. The Laboratory is owned by the DOE, and co-operated by DOE and the University of California.

D.1.2 HAZARDOUS WASTE

The hazardous waste generated at the Laboratory is comprised of three general types:

- Waste from research and development (this includes, but is not limited to, spent laboratory solvents and discarded equipment);

- Waste from process operations; and
- High Explosive (HE) waste.

Overall responsibility for hazardous waste management resides with the Environmental Management (EM) Division Waste Management Group (EM-7). EM Division's organizational structure is shown on Figure D-1. Generators of hazardous waste are responsible for proper identification, segregation, and documentation of their waste. Generators with hazardous waste storage or treatment units in their operating area are responsible for management of those units. Except for HE hazardous waste and classified hazardous waste, on-site packaging, transportation, and greater-than-90-day storage of hazardous waste are the responsibility of EM-7. HE hazardous waste is handled by the Dynamic Testing (M) and Design Engineering (WX) Divisions under Interim Status 40 CFR Part 265 regulations, and is therefore not discussed further in this Attachment.

Hazardous waste storage and treatment units in operation at the Laboratory are summarized in Table D-1. The location of each of the units is shown on Figure D-2. Hazardous waste units at the Laboratory include container storage areas, storage tanks, a controlled air incinerator, a batch waste treatment unit, and an industrial incinerator.

D.2.0 HAZARDOUS WASTE EMERGENCY RESPONSE RESOURCES

The primary resources for management of emergency incidents at the Laboratory reside within the Emergency Management Office (EMO), which is part of the Associate Director of Operations (ADO) Office. During an emergency situation, line management (i.e., the group leader of the affected area) works with the designated Emergency Manager from the EMO. The Emergency Manager, equivalent to the Incident Commander during an emergency, assumes primary responsibility for managing emergency response operations.

Outside of the Laboratory, contracted services and other agencies are also available for assistance during emergencies. These include the contracted services of Protection Technology Los Alamos (PTLA) (security) and Johnson Controls World Services Inc. (maintenance), the Los Alamos Fire Department and Police Department, and the Los Alamos Medical Center.

All response groups and agencies called upon during emergencies are coordinated by the designated Emergency Manager(Incident Commander). The emergency notification structure (procedure) is illustrated on Figure D-3. The responsibilities and/or assistance available from the response groups/agencies are listed in Table D-2 and discussed briefly in the following sections. Each of the emergency response groups/agencies shall retain a current copy of this Contingency Plan.

D.2.1 EMERGENCY MANAGEMENT OFFICE

The Director of the Laboratory has delegated the authority and responsibility for administering and implementing the Laboratory's emergency management program to the ADO. The EMO is included within the ADO office. The EMO coordinates and issues the Laboratory's Emergency Response Plan and provides response coordination for emergencies. The EMO also provides a 24-hour Emergency Manager to respond to emergencies, including hazardous waste releases, and an Emergency Response Coordinator (ERC) to coordinate Health and Safety and Environmental Management personnel and resources. Additionally, the EMO maintains the Emergency Operation Center (EOC) in a ready condition, should the center be required. The primary EOC is located at TA-59-1, an alternate EOC is located at TA-49-113.

An Emergency Manager will respond to emergency incidents involving the release of hazardous waste to the environment, including spills, fires, or explosions. The Emergency

Manager will initially assess the possible hazards to human health or the environment, and use whatever response group(s) or emergency equipment needed to control and contain the waste. In the event of an emergency, the Emergency Manager becomes the Incident Commander with full responsibility for all response actions. At the scene of the emergency, an Incident Control Group (ICG) will form consisting of responding emergency personnel who report to the Incident Commander. Under coordination by the ERC, the ICG works together and takes command and control of emergency situations.

EMO personnel designated as Emergency Managers are listed in Table D-4. Assignment as the designated Emergency Manager is rotated. The Emergency Manager can be reached by contacting the EMO (667-6211 during working hours, 667-7080 after working hours) or the Central Alarm Station (CAS) dispatcher (9-911).

The ERC is called out by and reports to the Incident Commander. In the event of an emergency, the ERC is responsible for coordinating the Hazardous Materials Response (HAZMAT) Team, and other related Health and Safety and Environmental Management personnel and resources.

D.2.2 HEALTH AND SAFETY (HS) DIVISION RESPONSE GROUPS

The Laboratory maintains its own response forces within the HS Division to handle emergencies. These response groups include:

- Occupational Medicine (HS-2)
- Risk Management Support (HS-3)
- Industrial Safety and Hygiene (HS-5)

Any of these groups may respond to an emergency, if requested by the ERC, and are coordinated by the ERC (through their team leader, if applicable) in the ICG.

D.2.2.1 Occupational Medicine (HS-2)

The Laboratory maintains its own medical facility operated by HS-2, Occupational Medicine. This group provides appropriate medical treatment for occupation-related illnesses and injuries and monitors employees to assess the effectiveness of health protection programs. In addition to promoting early identification and prevention of illnesses or injuries that may arise from chronic exposures to hazardous materials, HS-2 maintains documented records of the health status of employees and related occupational medicine activities.

Although HS-2 is not involved with on-scene emergency response, they maintain a central medical facility with a fully-equipped emergency room and decontamination facilities at TA-3, SM-409. Additionally, this group staffs three satellite first-aid stations at TA-53, TA-16 (S-Site), and TA-55. The locations of these emergency facilities are shown in Figure D-4. Medical staff includes physicians, physician's assistants, registered nurses, x-ray technicians, a physical therapist, a clinical psychologist, assistance counselors, and clinical laboratory technicians.

HS-2 is supported by the Industrial Safety and Hygiene Group's (HS-5) capabilities for exposure and treatment information via telephone access to the National Library of Medicine's TOXLINE and CHEMLINE; the Toxicity Databank files; POISONDEX and TOMESPLUS (Micromedics); and the CC/INFO database files on MSDSs, NIOSH Technical Information Center information, and the Registry of Toxic Effects of Chemical Substances. HS-2 maintains the TOMES system at the central medical facility (SM-409) to assist the clinical staff with timely exposure and treatment information.

D.2.2.2 Risk Management Support (HS-3)

HS-3, Risk Management Support, is responsible for coordinating and publishing policy and guidance on safety training and operational safety for the Laboratory. Additionally, HS-3 provides guidance and assistance to Laboratory divisions for safety analysis documents and to Laboratory groups for facilities analysis.

D.2.2.3 Industrial Safety and Hygiene (HS-5)

Personnel from HS-5, Industrial Safety and Hygiene, comprise the Laboratory HAZMAT Team. The HAZMAT Team is responsible for the aggressive mitigation of chemical and hazardous waste emergencies, including field decontamination of victims and responders. Laboratory standards require that the HAZMAT Team meet the training criteria for emergency response personnel specified in 29 CFR 1910.120(q)(6)(iii), (iv), and (v). The HAZMAT Team is part of the ICG reporting through the ERC. HS-5 also provides site field testing to determine the nature and extent of chemical contamination, provides information on correct handling of chemicals, makes recommendations on protective clothing and equipment, and provides exposure and treatment information.

D.2.3 ENVIRONMENTAL MANAGEMENT (EM) DIVISION RESPONSE GROUPS

At the scene, the Environmental Management groups are coordinated in the ICG by the ERC.

D.2.3.1 Waste Management (EM-7)

The Waste Management Group (EM-7) is responsible for initial response actions at RCRA TSD facilities, including hazardous waste treatment and storage units. This group also provides guidance on proper treatment, storage, and off-site shipment of hazardous waste.

D.2.3.2 Environmental Protection (EM-8)

The Environmental Protection Group (EM-8) is responsible for regulatory compliance and provides guidance on regulatory requirements to other groups. After an emergency, EM-8 provides field surveys of soil, water, air, and biota to determine environmental effects of exposure. The group provides expertise in hydrogeology and meteorology to establish near- and long-term environmental effects of emergency conditions.

D.2.4 CONTRACTED RESPONSE GROUPS

Contracted response groups report to the Operations Officer in the ICG or directly to the Incident Commander in the event of a smaller emergency.

D.2.4.1 Protection Technology Los Alamos (PTLA, Pro Force)

The Pro Force is responsible for Laboratory security, which is provided by Protection Technology Los Alamos (PTLA) under contract to the Laboratory. During an emergency, the Pro Force activities include maintenance of security, direction of traffic within the Laboratory, and control of access to the emergency scene. The Pro Force maintains the necessary equipment to perform these functions, such as crowd control equipment and patrol cars.

D.2.4.2 Johnson Controls World Services Inc. (JCI)

Johnson Controls World Services Inc. (JCI) provides a maintenance support force under contract to the Laboratory. This support force is under the Laboratory's direction in an emergency. JCI conducts inspections of Laboratory equipment, maintains equipment, and participates in post-emergency cleanup under the direction of HS-5.

D.2.5 OUTSIDE RESPONSE AGENCIES

Outside response agencies report to the Operations Officer in the ICG. In smaller emergencies, they may report directly to the Incident Commander.

D.2.5.1 Los Alamos Fire Department

The Los Alamos Fire Department (LAFD) provides fire protection and ambulance coverage for the communities of Los Alamos and White Rock and for the Laboratory. In the case of an emergency within the Laboratory, the Fire Department coordinates fire suppression efforts. The Laboratory requires that Fire Department personnel meet the training criteria for emergency response personnel specified in 29 CFR 1910.120(q)(6)(i) and (ii). A copy of the Memorandum of Understanding between the DOE and the County of Los Alamos for mutual aid assistance is included as Attachment D-1.

D.2.5.2 Los Alamos Police Department

In keeping with the principle of handling emergencies internally, the Los Alamos Police Department (LAPD) has only minimal interaction with the Laboratory in an emergency. That interaction is limited to traffic control on DOE roads with public access and to criminal investigations. A copy of the Memorandum of Understanding between the DOE and the County of Los Alamos for mutual aid assistance is included as Attachment D-1.

D.2.5.3 Los Alamos Medical Center

Those medical cases which cannot be handled at HS-2 will be transferred to the Los Alamos Medical Center (LAMC), where the Laboratory maintains a fully-equipped decontamination room adjacent to the emergency room. In the event that a case is sent to the hospital, support for the emergency room staff is provided by HS-2 medical personnel and HS-5 Industrial Safety and Hygiene staff. This assistance is coordinated through the Laboratory's EMO.

D.3.0 EMERGENCY EQUIPMENT AND COMMUNICATIONS

40 CFR Part 264 Subpart D requires a listing of all emergency response equipment available that can be used in the event of an emergency. Emergency equipment available at each hazardous waste unit and in the HAZMAT vehicles and trailers is provided in Table D-3. Table D-3 also includes supplemental emergency equipment maintained by JCI, the Los Alamos Fire Department, and HS-2. The locations of emergency facilities are shown on Figure D-4.

Effective emergency response at the Laboratory requires an efficient communication system which will integrate all personnel into the emergency response. The initial phase of an emergency will involve a small number of individuals at the affected area and notification of the designated Emergency Manager. When responding to hazardous waste emergencies, the EMO provides communications between response units and emergency organizations.

There are two central alarm systems at the Laboratory: the emergency central alarm system, and the maintenance central alarm system. The emergency central alarm system may be activated to notify the Emergency Manager of a hazardous waste emergency; the maintenance central alarm system is activated when an equipment malfunction may result in an emergency. These two systems are described below.

D.3.1 EMERGENCY CENTRAL ALARM SYSTEM

The emergency Central Alarm Station (CAS) is located at TA-64-1. This station is manned by Pro Force personnel 24 hours a day and is equipped with telephones, medium- and short-range radios, direct-line telephones, a National Warning System (NAWAS) station, and an emergency power system. The fire alarm board at the control room gives the location of automatic and pull fire alarms.

The emergency central alarm system is activated by:

- Telephone communication (911)
- Automatic fire alarms
- Manual pull alarms
- Computer interface (to warn of critical events at selected facilities)
- Break-in security
- Radio communications

Activation of the emergency central alarm system automatically alerts the CAS dispatcher, the Pro Force, and the Los Alamos Fire Department. For hazardous waste emergencies, the

CAS dispatcher notifies the designated Emergency Manager. The required emergency response groups are then notified of the problem by the Emergency Manager, ERC, and/or the CAS dispatcher.

D.3.2 MAINTENANCE CENTRAL ALARM SYSTEM

The maintenance central alarm system is manned by JCI personnel 24 hours a day. The maintenance alarm system interfaces with computers which monitor sensitive equipment throughout the Laboratory. Activation of an alarm triggers a call-out procedure to alert maintenance personnel and management supervision to correct the malfunction.

Internal communication systems at the Laboratory include:

- Centrex telephone system
- Medium-range radio nets (30-60 miles)
- Limited-range radio nets (3-10 miles)
- Telephone/radio paging
- Two-way hand-held radios

Off-site communications with Federal, state, county, and other agencies are maintained by the following:

- Centrex telephone system
- Private telephone lines (if Centrex fails)
- Medium-range radio nets (30-60 miles)
- Limited-range radio nets (3-10 miles)
- Two NAWAS
- KRSN radio link (local radio station)

The Laboratory EOC, located at TA-59-1 and maintained by the EMO, operates radio systems on key Laboratory and off-site channels. Emergency personnel responding to on-site incidents have the benefit of wide-area radio coverage using the EOC facilities. After hours, the Emergency Manager is responsible for activating whatever support personnel, services, or equipment is needed.

D.4.0 CONTINGENCY PLAN IMPLEMENTATION

The following section defines the guidelines used to initiate this Contingency Plan and the resulting actions taken.

D.4.1 GUIDELINES FOR IMPLEMENTATION

The decision to implement this Contingency Plan depends upon whether or not an imminent or actual incident involving a release of hazardous waste or hazardous materials to the environment could threaten human health or the environment. The following guidelines shall be used by the Emergency Manager in making the decision whether or not to implement this plan.

This Contingency Plan will be implemented in the following situations involving hazardous waste:

Spills

- A hazardous waste or hazardous material spill cannot be contained with secondary containment or application of absorbents.
- Precipitation threatens to move spilled material off site.
- A hazardous waste or hazardous material spill causes the release of flammable material, creating a fire or explosion hazard.
- A hazardous waste or hazardous material spill results in toxic fumes which threaten human health.
- An earthquake or other natural disaster threatens containment integrity.

Explosions

- An unplanned explosion involving hazardous waste or hazardous material occurs.
- An imminent danger exists that an explosion involving hazardous waste or hazardous material could occur.

Fires

- Any fire involving hazardous waste or hazardous material.
- Any building, grass, forest, or nonhazardous waste fire that threatens to volatilize or ignite hazardous waste or hazardous material.

D.4.2 EMERGENCY NOTIFICATION

During working hours, immediately upon discovery of an imminent or actual incident involving hazardous waste or hazardous material, line management and the Emergency Management Office will be notified by on-site personnel. During nonworking hours, all incidents involving hazardous waste or hazardous material shall be reported to the designated Emergency Manager or the CAS dispatcher. In the case of fire involving hazardous waste or hazardous material, notification of these individuals is superseded by the Laboratory fire alarm system. A fire is reported by dialing 911, activation of automatic alarms, or activation of a fire pull box. All fire alarms alert the CAS Dispatcher, the Los Alamos Fire Department, and the PTLA Pro Force. For fire involving hazardous waste, hazardous material, or a hazardous waste unit, the CAS Dispatcher shall contact the Emergency Manager.

Upon recognition of a hazardous waste emergency, the first arriving emergency trained person becomes the temporary Incident Commander. Once the Emergency Management Office is notified of the emergency, the designated Emergency Manager shall proceed to the scene and be briefed by the temporary Incident Commander, building/area personnel, and other emergency units/teams. The Emergency Manager may then assume the position of Incident Commander. The Incident Commander may recommend activation of the EOC to the ADO. Upon concurrence of the ADO, the EOC will be activated and the necessary members of the Emergency Management Team are determined. The Incident Commander shall form an ICG and contact the ERC. The ERC will notify the appropriate emergency response groups. Table D-2 describes the assistance available from each response group. The Incident Commander may use this list as criteria to determine which groups to contact in an emergency. Each response group maintains an on-call person and/or a call-down procedure to respond to emergencies.

Because the initial observer may not be able to recognize the involvement of hazardous waste or hazardous material, the Emergency Management Office shall be notified of any hazardous waste emergency. The IC and the ERC shall use whatever means are available, including the assistance of other response groups, computer data searches, and sampling to determine if a hazardous waste is generated and/or released. HS-5, EM-7, and EM-8 have the expertise to determine the nature and extent of contamination and the characteristics of the hazardous waste involved.

D.4.3 EMERGENCY MANAGER ACTIONS

Upon notification of an incident, the Emergency Manager (Incident Commander) shall:

1. Proceed directly to the scene;

2. Call the ERC;

3. Assess the nature of the incident (e.g., through communication with the temporary Incident Commander);

4. Assume Incident Command;

5. In conjunction with the ERC, determine the quantities and types of hazardous waste or hazardous material involved;

6. Based on the guidelines in Section D.4.1 of this plan, determine if implementation of this Contingency Plan is warranted; and

7. Recommend activation of the EOC, if necessary.

Upon deciding to implement this Contingency Plan, the Incident Commander will perform the following additional response actions using the ERC, when appropriate:

1. Assess the hazards to human health and the environment including both direct and indirect effects, such as generation of toxic, irritating, or asphyxiating gases and/or hazards of runoff of water or chemicals used for fire suppression. An individual designated by the Emergency Manager will use the guidelines in Section D.4.1 to assess the hazards to human health and the environment. If any of the criteria under Section D.4.1 are met, evacuation of the immediate area will be initiated if the responsible group leader has not already accomplished evacuation of the area.

2. Determine if evacuation of the local area is advisable and, if so, immediately notify appropriate response groups and the LAPD.

3. Notify required response personnel and the DOE Los Alamos Area Office (LAAO) by phone, radio, or through the CAS Dispatcher. In the case of fire, the Emergency Manager shall confirm that the Fire Department Officer-in-Charge at the scene is aware of the special hazards associated with hazardous waste, and will assume Incident Command.

4. Warn the remaining on-scene and response personnel of imminent or actual hazards using the radio or the public address (PA) system.

5. In emergency situations, the activated EOC Crisis Manager (Laboratory Director or designee), through the Environmental Management representative, will notify the New Mexico Environment Department (NMED) at (505) 827-9329, and the National Response Center at (800) 424-8802, reporting:

   - Name and telephone number of the reporter;

- Name and address of the facility;
- Time and type of incident;
- Name and quantity of material involved, to the extent known;
- The extent of injuries, if any; and
- The possible hazards to human health or the environment outside the facility.

6. Advise the response groups of hazards to minimize personnel exposure and expedite mitigation.

7. For hazardous waste treatment units where the emergency interrupts operations, EM-7 personnel or other emergency response personnel must monitor for leaks, pressure buildup, gas generation, or equipment ruptures. Monitoring during shutdown is discussed in Section D.10.1.

Once control of the emergency is established, the Incident Commander will delegate cleanup and decontamination responsibilities to the affected area's line management. The responsible group leader or group leader designee shall:

1. Arrange for site cleanup;

2. Provide for proper handling of recovered waste, contaminated soil, or contaminated surface/ground water;

3. Provide for decontamination of equipment as needed;

4. Arrange for replacement and/or repair of equipment, as needed; and

5. Ensure that testing is conducted to verify successful cleanup.

Within 15 days of the incident, DOE LAAO will submit the report described in Section D.13.0 to the Environmental Protection Agency (EPA) Regional Administrator and the NMED.

D.5.0 SPILLS

Sudden releases include spills of hazardous waste or hazardous material which pose a significant threat to human health or the environment. Spill incidents resulting in a sudden release of hazardous waste to the environment which cannot be contained or which presents a threat to human health or the environment require implementation of this Contingency Plan.

Hazardous waste is stored on site in a variety of containers, including but not limited to 55-gallon drums, lab packs, tanks, and small laboratory bottles. Volumes of hazardous waste stored vary from unit to unit. The general steps in handling hazardous waste spills are:

- Containment, including spreading absorbents or forming temporary dikes;
- Waste pickup and packaging in sound containers; and
- Decontamination followed by testing to assure adequate cleanup.

The steps to be taken for spill mitigation will be determined by the Incident Commander with input from the ERC. If initial mitigation of the spill is necessary before the Emergency Manager arrives, a qualified member of the affected area's operating group will serve as the temporary Incident Commander.

The emergency preparedness procedures related to flammable organic solvent spills call for stabilization of the spilled material with the organic solvent spill kit. Other chemical spills are to be stabilized using the acid and caustic spill kits or by the addition of universal sorbents. Personal protective equipment will be worn during spill control and cleanup. Environmental monitoring will be conducted to ensure that chemical exposure is minimized. The stabilized material will be treated as hazardous waste. Runoff which might occur from spills of listed hazardous waste that have migrated outside hazardous waste storage areas must be contained and handled as a hazardous waste. Temporary dikes may be constructed to contain the runoff. If the spill was from a characteristic hazardous waste, and analysis shows that the runoff does not exhibit the characteristic (i.e., toxicity, corrosivity, reactivity, ignitability), the runoff need not be managed as hazardous waste.

D.5.1 SPILL CONTROL PROCEDURES

When a flammable organic solvent, highly acidic, or highly caustic spill has been stabilized with the contents of an organic solvent, acid, or caustic spill kit, respectively, the resulting material may be absorbed by using corn cob fractions or universal sorbent. Universal sorbent

can be used to control hazardous waste spills. Department of Transportation (DOT)-approved drums or approved packaging will be used to collect all spilled material and contaminated absorbent. For corrosives, the drums will be lined with polyethylene drum liners. The list of emergency equipment (Table D-3) shows the equipment available for spill control at each area where hazardous waste is treated and/or stored. The ultimate disposition of any contaminated absorbent or waste material will be determined by EM-7 according to RCRA regulatory requirements.

D.5.2 DECONTAMINATION VERIFICATION

Decontamination will be accomplished at the spill site. After the spilled material has been absorbed, the material will be containerized. If the spill occurs on a cemented area, water or an appropriate solvent will be used to clean the area and this liquid will be absorbed with universal sorbent and containerized.

A sample of unused decontamination water or solvent and absorbent material will be taken prior to the final washing to establish baseline data. A composite sample will then be taken of the material used to absorb the final waste water. No hazardous waste constituents should be present in this sample that were not present at similar levels in the unused decontamination water. If the sample exhibits any of the characteristics of a hazardous waste as defined in 40 CFR Part 261 Subpart C, or a hazardous constituent as listed in 40 CFR Part 261 Appendix VIII (and not detected in the unused decontamination water) is present above established health-based levels, the decontamination procedure will be repeated. An alternative demonstration of decontamination may be proposed and justified to the Secretary, NMED, who will evaluate the proposed alternative in accordance with the standards and guidance then in effect. If the proposed alternative is accepted, decontamination levels will meet the levels approved by the NMED. Each composite sample will be taken using a thief or trier as specified in EPA's SW-846, "Test Methods for Evaluating Solid Waste," Physical/Chemical Methods, latest edition.

If the spill occurs on soil, any free liquid present will be absorbed with a compatible absorbent and the resulting material will be containerized. For such a spill, all contaminated soil will be excavated and containerized. The spill site will then be characterized to ensure that all contaminated material has been removed.

If a spill occurs in a sealed storage area, verification sampling will be performed after decontamination. Swipe samples or other types of sampling appropriate for the contaminant will be collected at random in the storage area and analyzed. For a spill that occurs in a storage area that does not have sealed floors, random samples of the floor material, such as concrete chips, will be collected and analyzed for decontamination verification. Removal of floor material contaminated with hazardous waste will occur if the level of contamination remains unacceptable after repeated decontamination attempts.

If a spill is from a known source, the spilled material will be analyzed for hazardous waste constituents known to be components of the hazardous waste managed at that unit. Analytical procedures specified in Table D-5 will be used. If the spill is from an unknown source, the chemical composition will be determined by using the parameters and test methods specified in Table D-5.

D.6.0 EXPLOSION

A sudden release of hazardous waste or hazardous material caused by an explosion may result in a significant threat to human health or the environment. The potential exists for hazardous material to be released during an explosion. If a hazardous material is released to the environment, this substance may become a regulated hazardous waste. Implementation of this Contingency Plan is required whenever a sudden release which cannot be contained or which presents a threat to human health or the environment occurs as a result of an explosion.

In the case of explosions, all personnel will immediately evacuate the area. Any injured personnel will be decontaminated in the field, if required and if time allows, and transported by LAFD ambulance to an HS-2 facility or LAMC for treatment. If an injury is severe and requires immediate medical evacuation, the injured person will be wrapped to contain contamination. The Emergency Management Office must be contacted immediately upon activation of the emergency central alarm system, and then the Emergency Manager will ensure that all necessary emergency response personnel are alerted. The LAFD is notified automatically upon central alarm system activation. The Emergency Manager assumes Incident Control and will remain near the site, but at a safe distance, to inform the personnel responding to the explosion of the known hazards.

Upon arrival at the scene, the LAFD Senior Officer will evaluate information provided by the group leader, other site personnel, other members of the ICG, and Incident Commander to select the appropriate fire-fighting methods and tactics. The LAFD Senior Officer will direct firefighting operations under the general direction of the Incident Commander.

D.7.0 FIRE

Fires may result in a sudden release of hazardous waste or hazardous material which poses a significant threat to human health or the environment. Hazardous raw material may be considered a regulated waste if it becomes a product of combustion. Implementation of this Contingency Plan is required whenever a fire incident results in a sudden release of hazardous waste which cannot be contained or which presents a threat to human health or the environment.

Depending on the size of the fire and the fuel source, portable fire extinguishers may be used. However, Laboratory policy discourages the use of portable fire extinguishers by employees and encourages immediate evacuation of the area and notification of the Los Alamos Fire Department. For any fire involving hazardous waste, the responsible group leader and the Emergency Management Office must be contacted immediately. The Emergency Manager will alert all necessary emergency response personnel. The Fire Department is automatically alerted when the emergency central alarm system is activated. If the fire spreads or increases in intensity, all personnel should evacuate to an area designated by the responsible group leader or Emergency Manager. The Emergency Manager assumes Incident Command and should remain near the scene to advise the personnel responding to the fire of the known hazards. The Emergency Manager is familiar with spill response and emergency actions and, therefore, is qualified to advise fire-fighting personnel of the potential hazards involved.

Upon arrival at the scene, the LAFD Senior Officer will evaluate information provided by the group leader, other site personnel, other members of the ICG, and Incident Commander to select the appropriate fire-fighting methods and tactics. The LAFD Senior Officer will direct firefighting operations under the general direction of the Incident Commander.

D.8.0 UNPLANNED NONSUDDEN RELEASES

Nonsudden releases include those incidents which, if uncontrolled, impact the environment over a long period of time. Such incidents include minor leaks from containers, loss of integrity of secondary containment, and incomplete treatment.

D.8.1 RESPONSIBILITY

Correction of a nonsudden release from a hazardous waste unit shall be the responsibility of the operating group and can be handled with normal maintenance and management procedures. Corrective actions for nonsudden releases that have resulted in an impact to the environment shall be coordinated with the NMED.

D.8.2 NONSUDDEN RELEASES

In general, the response to a nonsudden release will (1) contain the release, (2) correct the cause of the release, and (3) clean up any release to a level that protects human health and the environment based on guidelines described in Sections D.5.0, D.5.1, and D.5.2.

D.8.3 NONSUDDEN RELEASE SURVEILLANCE

In addition to routine inspection and site-specific sampling and testing, the Laboratory has established an area-wide environmental monitoring network maintained by EM-8. Monitoring and sampling locations for various types of measurements are organized into three main groups. Regional monitoring stations are located within the five counties surrounding Los Alamos County. They are placed up to 80 kilometers (50 miles) from the Laboratory, and serve to determine background conditions. Perimeter stations are located within approximately four kilometers (2.5 miles) of the Laboratory boundary and document conditions in residential areas surrounding the Laboratory. On-site stations are within the Laboratory boundary, and most are accessible only to employees during normal working hours.

The types of routine surveillance conducted at these stations include radiation measurements and collection of air particulates, surface waters and groundwaters, soil, sediment, and foodstuffs for subsequent analysis. Additional samples are collected to gain information about particular events, such as major runoff events and nonroutine releases.

D.9.0 EXPOSURE TO HAZARDOUS WASTE OR HAZARDOUS MATERIALS

If a person is exposed to hazardous waste or hazardous material, the affected person, a coworker, or line management will notify the EMO and/or the ERC. An EMO representative or the ERC will notify HS-5 directly, as soon as possible so that exposure levels and decontamination requirements can be established. Chemical material in the eye or on the skin will be washed either with the entire contents of the portable eye wash station or for at least 15 minutes. The eyelids will be held open during washing, if possible. The injured person will then be quickly transported to the HS-2 Medical Facility for evaluation. If possible, the material involved in the injury will be ascertained and the information given to the medical staff.

Other potential hazardous material exposures will necessitate evacuation if anyone notices any of the following conditions:

- Irritation of the eyes, breathing passages, or skin
- Difficulty in breathing
- Nausea, light-headedness, vertigo, or blurred vision

D.10.0 EVACUATION

A facility will be evacuated upon the voice command to evacuate the area, or upon the sounding of the evacuation alarm or the fire alarm.

D.10.1 EMERGENCY PROCESS SHUTDOWN PRIOR TO EVACUATION

Personnel are instructed to shut down equipment prior to evacuating a building unless an immediate building evacuation is announced or signaled. To ensure efficient shutdown, training and exercises in process shutdown are performed. In the case of an immediate evacuation, a selected team may shut down designated equipment in an evacuated area. The team will be equipped with the proper equipment, clothing, and breathing apparatus. If present, HS-3, and HS-5 will provide advice and assistance. Process shutdown procedures apply mainly to hazardous waste treatment units, which include the controlled air incinerator at TA-50-37, the Batch Waste Treatment Unit at TA-50-1, and the Industrial Incinerator at TA-16-1150. Process shutdown procedures are described below.

D.10.1.1 TA-50-37 Controlled Air Incinerator

If a fire or evacuation alarm sounds at TA-50-37 during the operation of the controlled air incineration process, the operating crew will initiate a process shutdown in accordance with the current standard operating instructions. Three logic sequences are provided to shutdown the process in a safe and orderly manner.

- Controlled Shutdown - initiated when there is potential for significant damage to minor process components. This is also the normal shutdown mode at the completion of a run. When controlled shutdown is initiated, feeding of waste to the incinerator is stopped and a programmable set-point generator is activated that directs remote set-point inputs to the temperature controllers, causing a gradual decrease in chamber temperatures. Switches internal to the set-point generator cause an orderly-timed shut down of process components.

- Fast Shutdown - initiated for conditions that could likely result in loss of containment or damage to major process components. Waste feeding is stopped. Following a two-minute timed interval following the last feeding of solid waste (immediate, if feeding liquid waste), the upper and lower chamber burners are shut down and the system valves and dampers are positioned so as to maintain a negative pressure in the system while minimizing flow through the system. Snuffing steam is introduced into the lower chamber. The two-minute delay when feeding solid waste allows for the ignition of pyrolitic gases formed immediately after feeding.

- Scram Shutdown - initiated at the discretion of an operator. The chain of events are identical to the fast shutdown except that the sequence is not delayed when

feeding solid waste. Scram buttons are located at the incinerator and in the control room.

- The last two shutdown modes are potentially destructive to the incinerator refractory and are initiated only when the consequences of not shutting down are greater than the consequences to the incinerator during a scram or fast shutdown. It is the responsibility of the process lead engineer and the operating personnel to assess any situation and initiate the proper process shutdown sequence.

Table D-6 lists items that are to be monitored at the controlled air incinerator during an emergency shutdown.

D.10.1.2 TA-50-1 Batch Waste Treatment System

The Batch Waste Treatment System will be operated in accordance with current Standard Operating Procedures. If a fire or evacuation alarm sounds during the operation of the System, the operating crew will initiate a process shutdown. Because the process is a batch treatment, cessation of treatment is adequate to bring the process to a safe condition. In general, the process shutdown should include the following:

- Shutdown of treatment chemical feeds;
- Shutdown of the waste pump discontinuing waste transfer or circulation;
- Shutdown of steam/hot water to the reactor jacket, if any;
- Shutdown cooling water only if there is a risk of contamination of the water with waste (continued cooling removes residual heat from the system); and
- Allow the reactor mixer to operate unless its operation poses a unique hazard (continued mixing helps remove heat and prevents stratification of contents).

D.10.1.3 TA-16-1150 Industrial Incinerator

If a fire or evacuation alarm sounds during the operation of the TA-16 Industrial Incinerator, the operating crew will initiate a process shutdown. The TA-16 Incinerator is equipped with automatic and manual controls for shutdown of burners. Burners may be shut down manually by tripping a single switch. Automatic shutdown of the burners will occur in the event of a power failure, limit failure, or flame failure.

D.10.2 EVACUATION PLAN

Emergency situations may warrant the shutdown and evacuation of an area(s) or building(s) in order to protect personnel and property, to anticipate the emergency condition, or to

enhance the appropriate response. Table D-7 shows the criiteria for evacuation, persons responsible for initiating evacuations, and reentry conditions.

To initiate building evacuation, the evacuation or fire alarm is sounded and/or the public address system is used. The evacuation alarm cannot be silenced and reset by site personnel. The Fire Alarm Maintenance Section at 667-4027 and the LAFD Platoon Chief at 667-7026 can silence and reset the alarm. To evacuate a portion of a building, the PA system is more appropriate. The PA system will notify the occupants of the area to be evacuated and, additionally, will advise personnel in the rest of the facility of the existence of a problem in that specific area.

The PA system, fire alarm, or evacuation alarm may be used to initiate an evacuation. Once evacuation has been initiated, personnel are to turn off all equipment, if conditions allow, that could contribute to the hazard if left unattended. Personnel should then leave the affected area and go to the muster area.

In the event of an evacuation of only a portion of the building, one of the outbuildings, or outlying work areas, the responsible group leader will designate a control point at the closest safe location (e.g., considering wind direction). This area will be outside the affected area and will serve as a muster point where the group leader or his designee can oversee evacuation operations and work to prevent further spread of the hazard.

As personnel exit an affected building/area, a primary sweep will be performed to ensure that all personnel have evacuated. If the building/area is evacuated, a group leader designee will take the attendance roster to the muster area, call roll, and report personnel accountability to the Incident Commander. The evacuation procedure is as follows:

1. Person discovering the accident or emergency will call 911 or 9-911, and ensure that line management and the EMO are notified.

2. Building Emergency Plan will be followed concerning evacuation, sweep, personnel accountability, and equipment shutdown procedures.

For a small-scale evacuation, a responsible on-site person may direct evacuation. For a large-scale evacuation, the emergency central alarm system may be activated, the EMO will be notified and, until the Emergency Manager arrives at the scene to assume responsibility for the evacuation, a responsible on-site person may begin the evacuation process.

D.11.0 SALVAGE AND CLEANUP

The affected area will be surveyed by appropriate representatives from the HS and EM Groups before salvage, cleanup, and return to normal operations. Visual inspections of the affected area will be supplemented by sampling to determine whether cleanup is complete. After determination of any existing hazards from toxic or hazardous gases or fumes, electrical hazards or other unsafe conditions, personnel or selected teams, equipped with proper breathing apparatus and protective clothing, will reenter the area to perform designated decontamination tasks, repairs, and salvage to allow the return to normal operations. After an emergency, the Incident Commander will turn the operation over to line management, who will:

- Provide for proper handling of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion. Contaminated material will be treated as a hazardous waste and temporarily stored at one of the interim status hazardous waste storage areas or less-than-90-day storage areas at the Laboratory. EM-7 will be responsible for determining the final disposition of the waste. This determination will be made in compliance with RCRA interim status standards.

- Arrange for site cleanup procedures to be completed and ensure that no waste that may be incompatible with the released material is treated or stored in the same area.

- Ensure that emergency equipment is cleaned, decontaminated, and fit for its intended use before operations are resumed. Equipment will be visually inspected and sampled to determine the type and degree of contamination and appropriate cleanup measures that will be used.

Prior to resuming operations, the owner/operator (DOE LAAO) will notify appropriate local authorities that cleanup procedures are completed and emergency equipment is cleaned and fit for its intended use.

Damage assessment, recovery, and reporting shall be performed within the requirements of DOE Order 5000.3A, as referenced by DOE Order 5500.3A (Emergency Planning and Preparedness for Operational Emergencies). The Incident Commander assumes the coordination of post-emergency actions, particularly during the time period immediately after the emergency. Such actions include cleanup operations, repair of vital equipment, or interim hazard-removing operations (such as demolition of unstable walls). The services of the

affected operational organizations, HS and EM Divisions, JCI, and other on-site resources will also be utilized to estimate cleanup costs and operational impact.

D.12.0 POST-EMERGENCY ASSESSMENT

When the emergency is over, the cause of the emergency and the effectiveness of the response are investigated, in order that future emergencies may either be prevented, or that the response to them may be more effective. Following each event requiring the implementation of this Contingency Plan, the Emergency Manager will schedule and conduct a critique with representatives of all response groups, building/area representatives, and Laboratory management to determine the adequacy of the response.

D.13.0 EMERGENCY RESPONSE RECORDS AND REPORTS

The details of any-incident that requires implementation of this Contingency Plan must be recorded by the responsible group or section leader for that hazardous waste unit. This Incident Report must include the time, date, and full description of the incident.

Any emergency that requires implementation of this Contingency Plan will be reported in writing within 15 days to the NMED. The report, submitted by DOE LAAO, shall include the following data:

- Name, address, and phone number of owner or operator;
- Name, address, and phone number of the facility;
- Date, time, and type of incident (e.g., fire, explosion, spill);
- Name of material involved;
- Quantity of material involved;
- Extent of injuries (if any);
- Assessment of actual or potential hazards to human health or the environment; and
- Estimated quantity and disposition of material recovered from the incident.

D.14.0 CONTINGENCY PLAN AMENDMENT

This Contingency Plan will be reviewed by the EMO, EM-7, and EM-8, and by other Groups, if necessary, and will be immediately amended if determined to be inadequate to handle spills, explosions, fires, and whenever:

- The facility permit is revised;
- There is significant change in the design or operation of the facility (i.e., waste quantities handled and handling techniques);
- The list of Emergency Managers changes;
- The information in figures and/or tables changes;
- The list of emergency equipment significantly changes;
- Operating experience, drills, or technical review demonstrates that the plan is inappropriate; or
- Actual implementation of the plan demonstrates inadequacies.

This plan is a controlled document distributed by the EM-8 Group. Amendments shall be issued to all Contingency Plan holders and will include a cover letter that describes the plan changes and rationale for those changes.

LOS ALAMOS NATIONAL LABORATORY
ENVIRONMENTAL MANAGEMENT
(EM) DIVISION

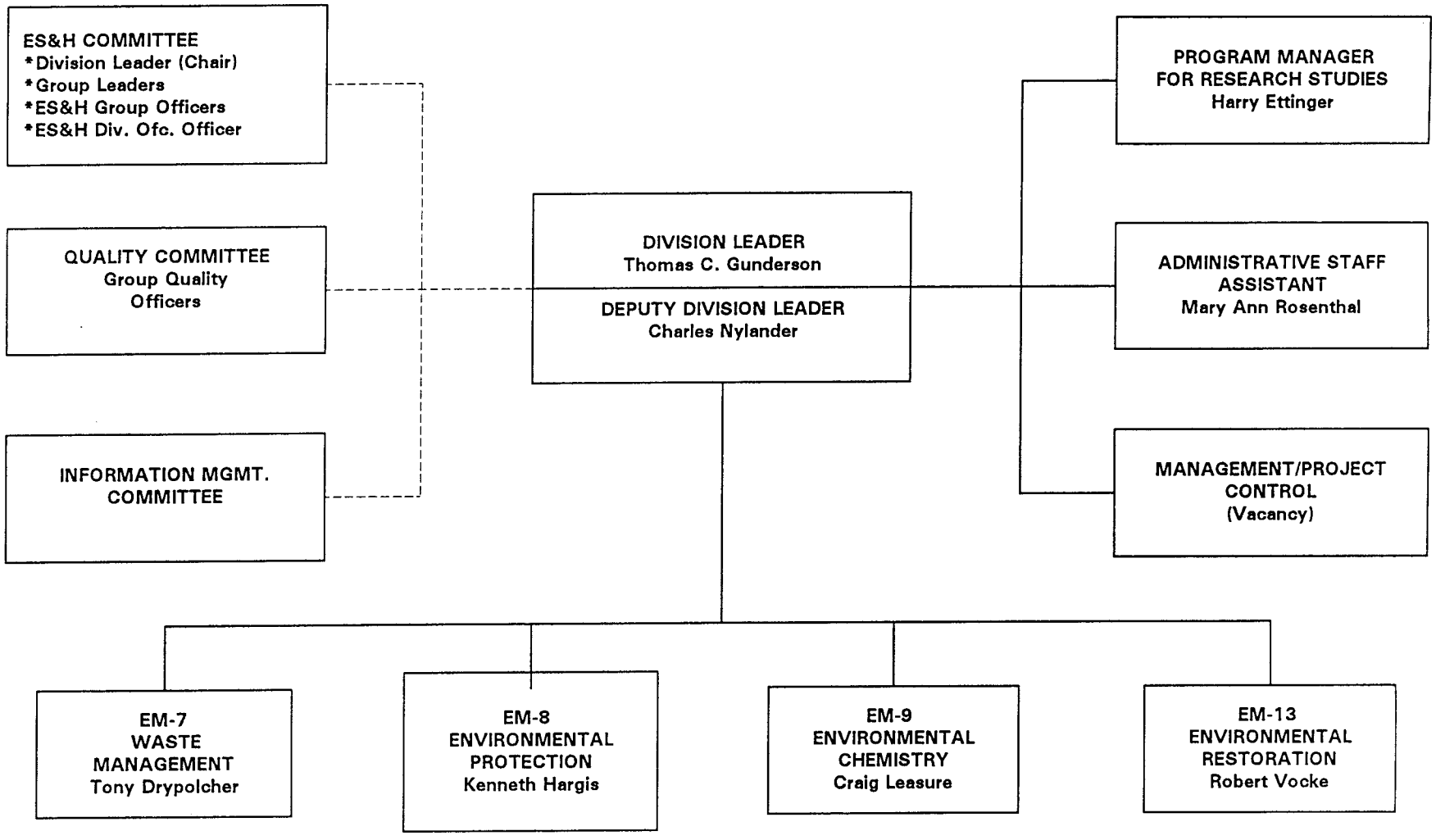
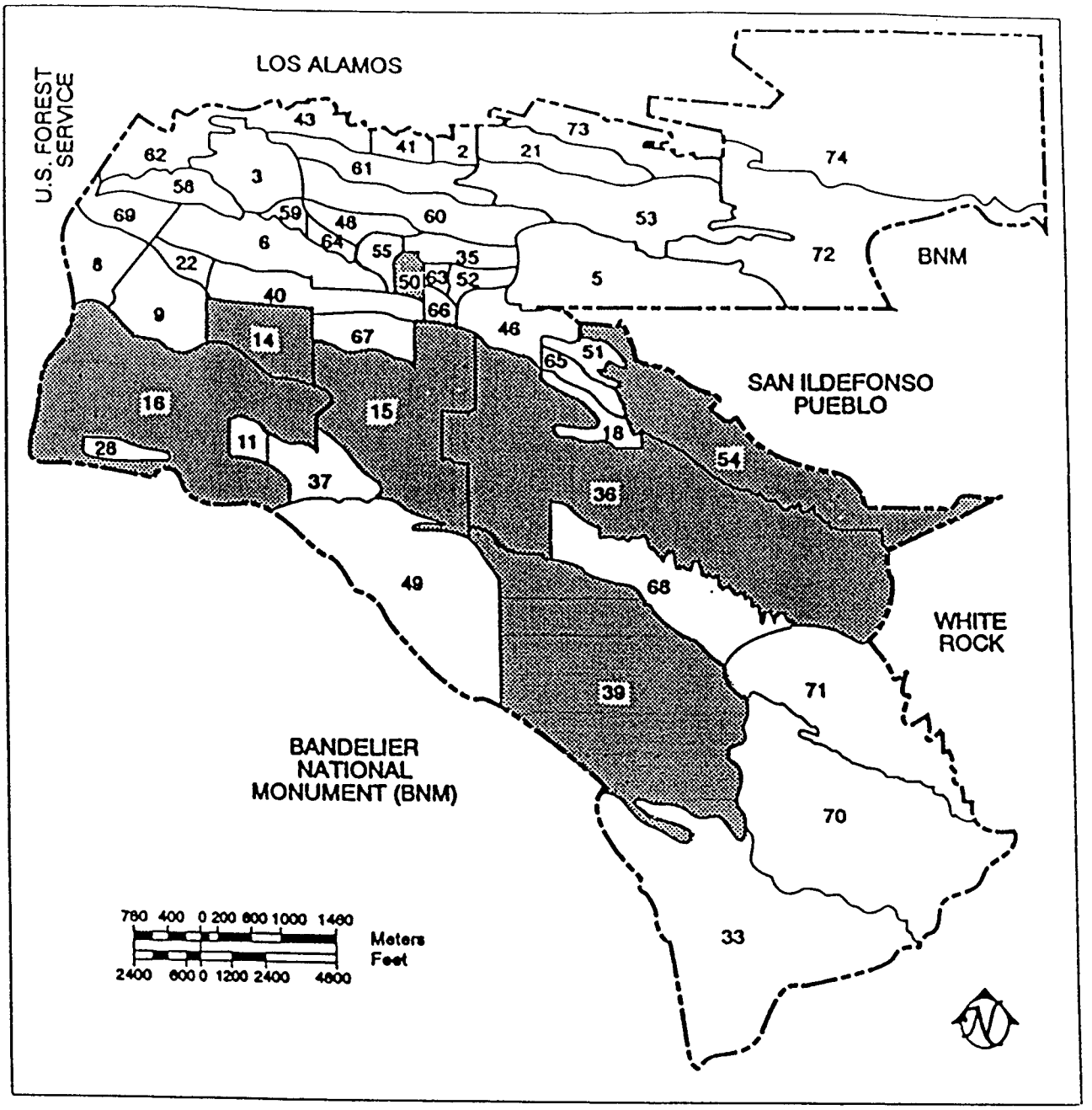


FIGURE D-1. ENVIRONMENTAL MANAGEMENT ORGANIZATION CHART



SHADING INDICATES TECHNICAL AREAS IN WHICH WASTE MANAGEMENT UNITS ARE LOCATED

FIGURE D-2

LOS ALAMOS
TECHNICAL AREAS

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LOS ALAMOS, NEW MEXICO
IT CORPORATION

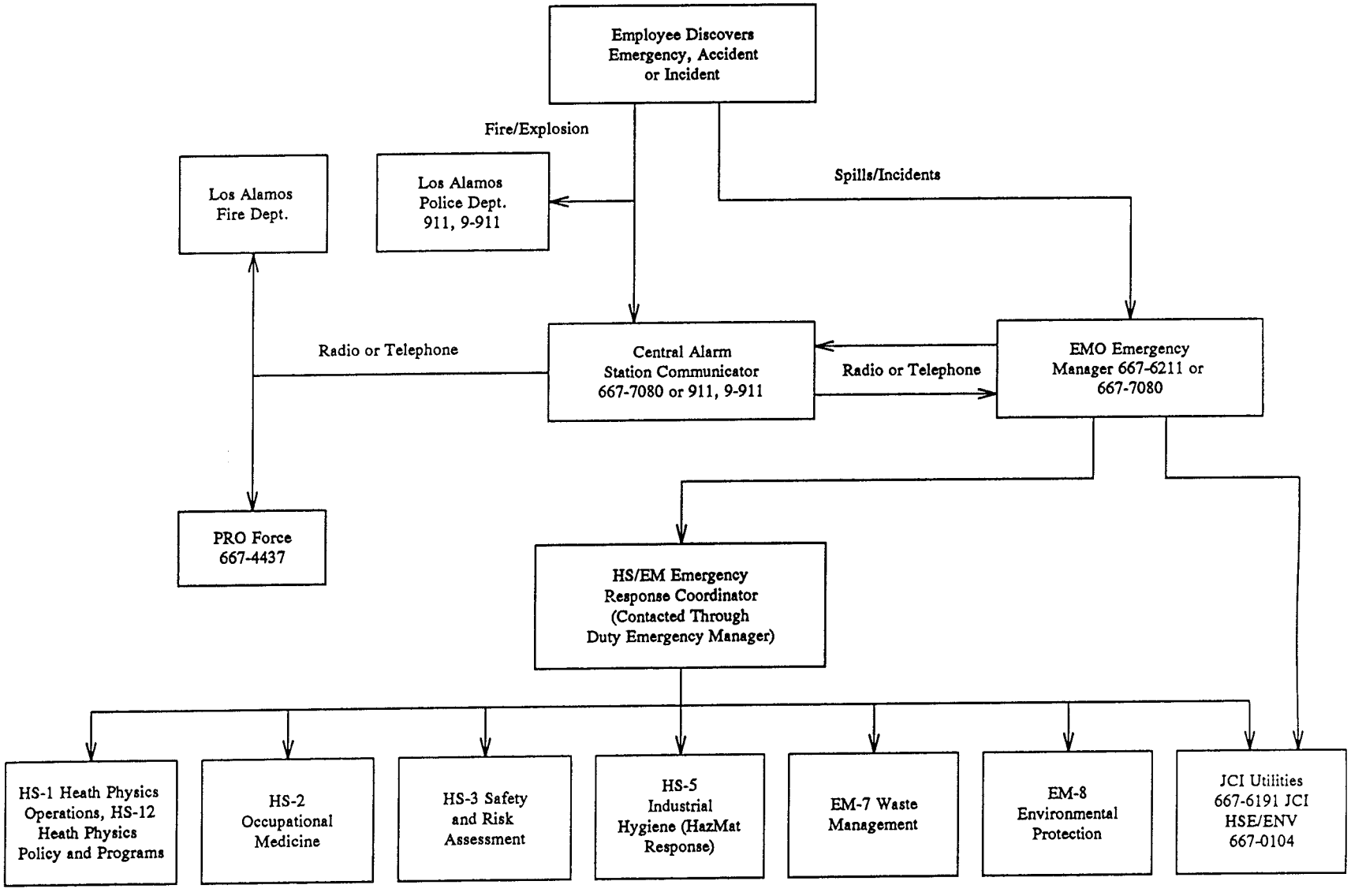

FIGURE D-3. HAZARDOUS WASTE EMERGENCY NOTIFICATION STRUCTURE

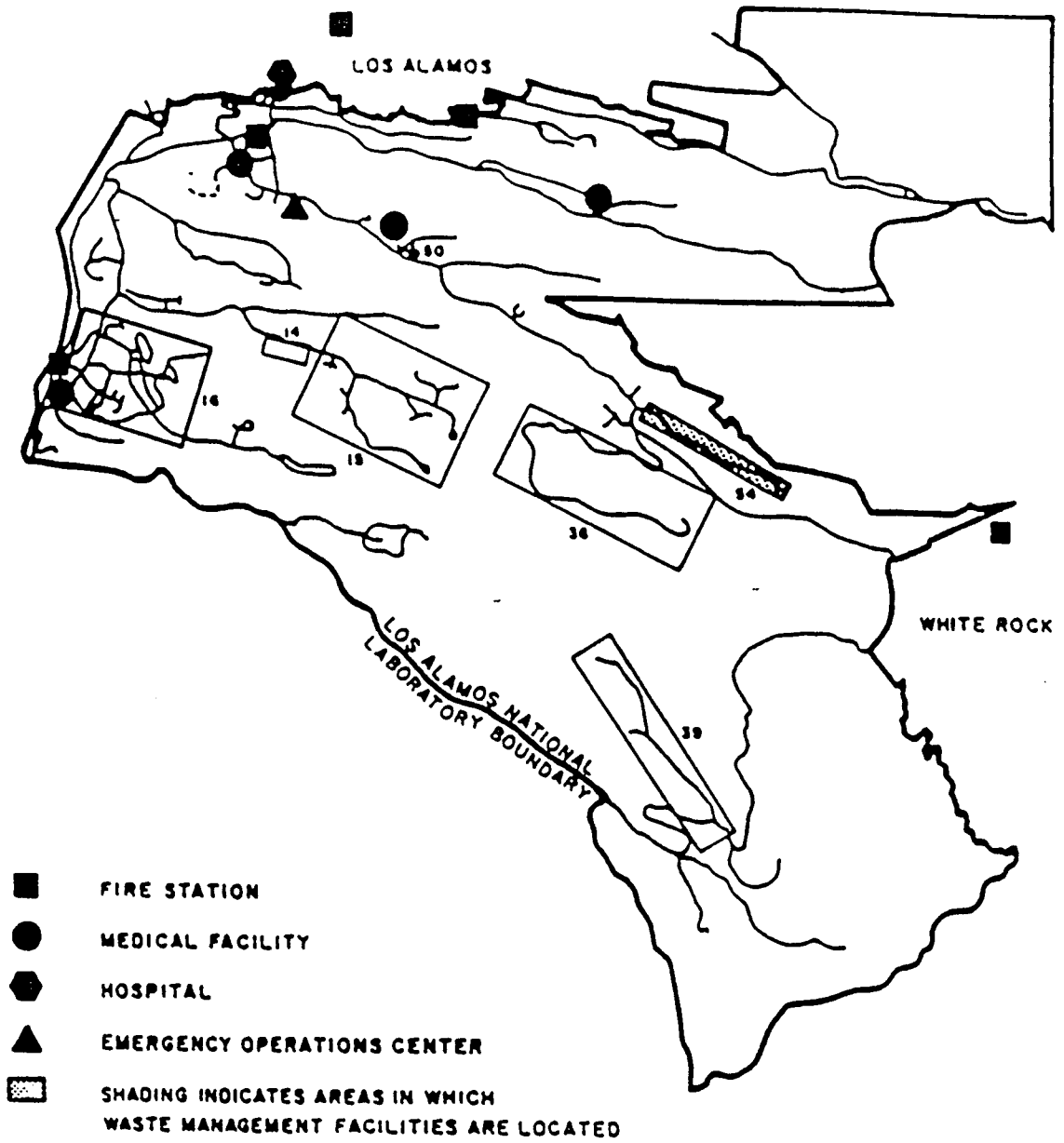

Figure D-4

EMERGENCY FACILITIES

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LOS ALAMOS, NEW MEXICO

IT CORPORATION

TABLE D-1

Hazardous Waste Storage and Treatment Units at Los Alamos National Laboratory

TA and Building or Area Description	Waste Managed	Activity Description
TA-16-1150, Industrial Incinerator	F003 and reactive wastes	HE waste incineration
TA-50-1 Batch Waste Treatment Facility	Electrochemistry wastes Isotope separation wastes	Chemical treatment by neutralization, metal precipitation, and cyanide destruction
TA-50-37 Controlled Air Incinerator	Combustible liquids and solids, F-listed solvents and TC metals may be present	Waste incineration with flue gas treatment
TA-50-37, Room 117	Liquid and solid combustible waste; ignitable waste, F-listed solvents and TC metals may be present	Storage/staging areas for incinerator
TA-50-37, Room 115 Liquid Waste Feed Tanks	Liquid combustible waste; F-listed solvents and TC metals may be present	Liquid waste blending and storage prior to incineration
TA-50-114 Modular Storage Shed	Solidified process waste; waste may contain TC metals and F-listed solvents	Storage
TA-54, Area L	gas cylinders; RCRA characteristic, F-, P-, and U-listed waste	Storage
TA-54, Area L D005 Treatment Tanks, and Truck-Mounted and Container Treatment System	Treatment of Ba-contaminated sand by precipitation	Storage/treatment

TABLE D-2

Response Groups and Agencies Available to the Emergency Management Office for Guidance and/or Emergency Assistance

Laboratory Controlled Response Group	Telephone	Responsibilities
HS-1, Health Physics Operations	667-5296	Radiological monitoring and decontamination
HS-2, Occupational Medicine	667-7251	Emergency medical treatment
HS-3, Risk Management Support	667-3363	Provides personnel to perform risk analyses; provides guidance on operational safety
HS-5, Industrial Hygiene and Safety	665-4427	Site evaluation - field testing to determine the nature and extent of contamination (nonradiological); specify protective clothing and equipment; provide HAZMAT Team
HS-12, Health Physics Policy and Programs	667-5296	Provide support for radiological incidents; provide REA Team capable of performing radiological assessments and personnel decontamination; maintain radiological emergency preparedness for the Laboratory
EM-7, Waste Management	667-5839	Provide guidance on proper treatment, storage, and off-site shipment of mixed waste
EM-8, Environmental Protection	667-5021	Field surveys to determine spread of contamination and adequacy of cleanup
EM-9, Environmental Chemistry	667-3269	Chemical/radiological analytical services
NMT, Nuclear Materials Technology	667-2556	Monitor for leaks, pressure buildup, gas generation, or equipment ruptures in the event of interruption of operations at TA-55 due to an emergency
Protection Technology Los Alamos Protective Force (Pro Force)	667-4437	Traffic control, security
Johnson Controls World Services, Inc.	667-6191	Maintenance personnel and equipment; assist in waste cleanup under HS-5 guidance.

TABLE D-2

Response Groups and Agencies Available to the Emergency Management Office for Guidance and/or Emergency Assistance
(Continued)

Non-Laboratory Controlled Response Group	Telephone	Responsibilities
Los Alamos Fire Department	9-911	Firefighting personnel and equipment
Los Alamos Police Department	9-911	Traffic control on DOE roads with public access
Los Alamos Medical Center[a]	662-4201 or 911	Medical services

[a]Medical services related to hazardous and mixed waste injuries provided under the direction of HS-2.

TABLE D-3

Emergency Equipment

TA-50

Emergency Equipment at TA-50, Available for the Controlled Air Incinerator and Associated Container Storage Areas and Tank Storage:

FIRE CONTROL EQUIPMENT: (TA-50-37)

12 Fire Extinguishers (3 CO_2, 9 Halon)

Locations:
I Halon in Room 111
1 Halon, 2 CO_2 in Room 112
2 Halon in Room 114
1 Halon at front main doorway
1 CO_2 in Room 106
1 Halon in Room 209
1 Halon in Room 202
I Halon in Room 21
1 Halon in Room 116

Description of General Capabilities:
These portable units are from 5.5 to 44 pounds in capacity and may be used by any employee in the event of fire.

14 Fire Alarm Pull Boxes

Locations:
1 in Room 111
2 in Room 112
1 south of the library and conference room
2 in Room 114
1 east of the women's change room
1 in the break room
1 in Room 202
2 in Room 21
1 in Room 15
1 in Room 116
1 in the access hallway, Room 113

Description of General Capabilities:
Manually operated fire alarms may be activated by any employee in the event of fire to notify the CAS.

An automatic water sprinkler system is located throughout TA-50-37. Room 115 has an additional Halon system. Rooms 117 and 118 have a supplementary external foam additive system to maximize fire suppression.

Description of General Capabilities:
The automatic sprinkler system delivers a maximum of 200 psi of water spray through sprinkler heads placed at locations which will maximize fire suppression.

TABLE D-3

Emergency Equipment
(Continued)

Emergency Equipment at TA-50, Continued:

FIRE CONTROL EQUIPMENT (Continued):

Halon extinguishing systems supplement the automatic sprinkler system in TA-50-37 and are used to protect high value equipment or in areas of special operations.

An automatic thermal alarm system is located throughout TA-50-37.

4 Fire Hydrants

Locations:

1 northwest corner of TA-50-94, west of TA-50-37
1 west of TA-50-69
1 northeast of TA-50-37
1 southeast of TA-50-37

13 Freeze-Proof Faucets

Locations:

2 hot water and 2 cold water faucets located in Room 116
1 faucet located in Room 114
8 faucets in various outdoor locations surrounding TA-50-37

TABLE D-3

Emergency Equipment
(Continued)

Emergency Equipment at TA-50, (Continued):

SPILL CONTROL EQUIPMENT:

TA-50-37, Room 115 is curbed and has a capacity of 562 gallons. Room 117 has a recessed floor with a capacity of approximately 23,700 gallons. Room 118 is equipped with a 200 gallon capacity sump. Overflows from Room 118 are contained in the recessed floor in Room 117 or may be handled by a sump in Room 117. Absorbent is kept in Room 114. Absorbent includes seventy-five 2-foot spill pillows and five-hundred 18 inch by 36 inch absorbent sheets. The Spill Prevention, Control, and Containment Plan is located in the safety document bookcase in TA-50-37.

COMMUNICATION EQUIPMENT:

Thirty-one telephones and a building-wide paging system are located throughout TA-50-37, 94 and 54. Additionally, a two-way radio is assigned to Truck No. 38438.

Alarms

Fire alarm emits a double slow whoop sound.
Evaluation alarm is a continuous single-tone alarm.

Description of General Capabilities:
Telephones are available to any employee for use in internal and external communication. Fire alarm may be activated by any employee in case of fire to notify the CAS. Evacuation alarm is activated whenever a situation requires evacuation of the area.

DECONTAMINATION EQUIPMENT:

Six safety showers and eye washes are located in or around TA-50-37. MSDS information specific to chemicals on hand is located in each laboratory and shop.

TABLE D-3

Emergency Equipment
(Continued)

Emergency Equipment at TA-50, Continued:

Description of General Capabilities:
Safety showers and eye washes are used by personnel who receive a chemical splash to the skin or eyes. Specific MSDSs for the chemical(s) should be obtained prior to working with mixed waste or mixed material to determine if the application of water is indicated for decontamination. Decontamination area in egress bay (Room 116) allows for a wash down of contaminated equipment.

PERSONAL PROTECTIVE EQUIPMENT:

2 SCBA are located in Room 103.

Room 103 is a change room with protective clothing available.

OTHER:

Portable emergency generator (5,000 watt) is located at TA-50-54.

Vehicle available for evacuation of personnel is located onsite.

Forklifts (electric, and propane) are located in Room 114.

1 HazMat vehicle is located at TA-50-1 and is available for emergencies in the area.

TABLE D-3

Emergency Equipment
(Continued)

TA-54

Emergency Equipment at TA-54, Area L:

FIRE CONTROL EQUIPMENT:

9 Fire Extinguishers (Halon, Water, CO_2)

Locations:

1 Halon (A, B, C) inside TA-54-37
1 Halon (A, B, C) inside TA-54-60
1 water (A) inside TA-54-51
1 Halon (A, B, C) inside northeast end of TA-54-32
1 extinguisher (B, C) inside TA-54-39
1 extinguisher (CO_2) southeast end of Area L next to spill kit
1 CO_2 (B, C) located outside of TA-54-31
1 extinguisher located 30 feet from southeast side of TA-54-32
1 water (A) located outside of TA-54-117

Description of General Capabilities:
These fire extinguishers may be used by any employee in case of a small fire.

Fire alarm pull boxes are located inside TA-54-37, 39, 51, 60, and 117.

Description of General Capabilities:
Fire alarms may be activated by any employee in the event of a fire to notify the CAS.

1 fire hydrant is located 30 feet south of entrance to site.

1 freeze- proof faucet is located approximately 25 feet east of TA-54-31.

SPILL CONTROL EQUIPMENT:

Shovels located in TA-54-46
Oversized drums
Sawdust absorbent located on site

TABLE D-3

Emergency Equipment
(Continued)

Emergency Equipment at TA-54, Area L, Continued:

Spill kits are located throughout Area L. Each kit includes two 25-pound bags of Zorball, 50 pounds of caustic neutralizer, 100 pounds of acid neutralizer, and an inventory of tools and supplies. A complete spill kit inventory list can be obtained at TA-54, Area L.

COMMUNICATION EQUIPMENT:

Two-way radios are available to personnel while in Area L. Three 2-way radios are issued to vehicles used in Area L activities. Three outdoor telephones, are located in Area L. There are also fire alarms , evacuation alarms and a PA system at Area L.

Locations:
Telephones are located inside TA-54-37, 39, 51, 55 and 61. Two evacuation telephones and alarm buttons are located at the northeast end of structure 54-32 and inside building 37, by the secretary's desk. A portable phone is available for emergency communications during evacuation. This portable phone is located in building 37, in the secretary's office. The fire alarm is a double slow whoop sound. An emergency evacuation paging system is located in TA-54-37 and at the north end of TA-54-32. The evacuation alarm is a pulsating sound. The PA system can be operated from any phone in Area L.

Description of General Capabilities:
Telephones for internal, external, and PA capabilities are available for use by any employee. Fire and evacuation alarms are activated in the event of a fire or in case an evacuation is required.

DECONTAMINATION EQUIPMENT:

One emergency shower and eyewash are located immediately east of TA-54-31. One emergency shower and eye wash are located between TA-54-35 and 36. One emergency shower and eyewash are located in TA-54-39. One portable eye wash is located in TA-54-52. MSDSs are available in TA-54-46.

Description of General Capabilities:
Safety showers and eye washes are used by personnel who receive a chemical splash to the skin or eyes. Specific MSDSs for the chemical(s) should be obtained prior to working with mixed waste or mixed material to determine if the application of water is indicated for decontamination.

TABLE D-3

Emergency Equipment
(Continued)

Emergency Equipment at TA-54, Area L, Continued:

PERSONAL PROTECTIVE EQUIPMENT:

2 SCBAs are located in TA-54-55.

OTHER:

A portable emergency generator is located in TA-54-46.

A forklift and Bobcat are available in Area L.

Heavy equipment from Area G is available for emergencies at Area L.

6 crashgates for evacuation purposes located throughout Area L.

1 pedestrian/crashgate located next to building 37.

TABLE D-3

Emergency Equipment
(Continued)

Supplemental Emergency Equipment Available from the Los Alamos Fire Department:

	Number
1,000 gallons per minute pumper truck	1
1,250 gallons per minute pumper trucks	7
Minipumper trucks	4
3,000-gallon tankers	2
2,000-gallon tankers	2
1,500-gallon tanker	1
Modulator ambulances	4
Rescue vehicles	2
Crash-Fire-Rescue (CFR) units	2
SCBA	70
105-foot ladder truck	1
Personnel with 81 hours MTA training	110
Various firefighting equipment	

TABLE D-3

Emergency Equipment
(Continued)

Supplementary Emergency Equipment Available from Johnson Controls World Services Inc.:

	Number
TRANSPORTATION	
Pickups, 1/2 through 3/4 ton	183
Trucks 1 through 3 ton	25
Powerwagon (E-20781) with welder (PN-30256) mounted on vehicle, CC-135	1
Buses (11-passenger)	2
Station wagons	2
Vans, panels, and carryalls	24
SPECIAL EQUIPMENT	
Road grader, Cat, self-propelled blade, with radio	1
Grader, John Deere, self-propelled, with radio	1
Loaders, bucket, Melroe, Bobcat, 1/3 cubic yards	3
Loader, bucket, Cat, 2-3/4 cubic yards, with radio	1
Loader, Flat-Allis, 3 cubic yards	1
Loader, bucket, Cat, 2-1/2 cubic yards	1
Loader, bucket, Cat, 3-1/4 cubic yards	1
Loader, bucket, Yale, 3 cubic yards, with radio	1
Loader, bucket, backhoe, Case, 1-1/2 cubic yards	1
Loaders, bucket, backhoe, Case, 7/8 cubic yards	2
Loader, backhoe, Ford, 1 cubic yard	1
Snowplows, Bombardier, with blade	2
Bulldozer, D-8, Crawler	1
Bulldozers, TD-25, International	2
Scraper, Terex, self-propelled	1
Scraper, Flat-Allis, self-propelled	1
Bulldozer, 280, rubber-tired, with radio	1
Semitrailers	5
Power saw	(approx) 6
Flush, street, 3000-gal. tanker truck, 55-gal.	FMC1
Mobile transceivers (2-way, KOB-753)	20

TABLE D-3

Emergency Equipment
(Continued)

Supplementary Emergency Equipment Available from Johnson Controls World Services Inc., Continued:

	Number
SPECIAL EQUIPMENT (CONT.)	
Handsets (2-way)	64
Pageboys (1-way)	235
Welders, mounted on trailers and trucks	32
PERSONNEL	
Bulldozer operators	14
Clerks	10
Dispatchers	1
Mechanics	17
Power saw operators	8
Radio and telephone operators	1
Truck drivers	13

TABLE D-3

Emergency Equipment
(Continued)

Emergency Equipment at the Medical Facility, HS-2

At SM-409 Central Clinic:

PERSONNEL:	Number
Physicians (2 casual)	7
Physician's Assistants (2 casual)	5
Nurses (6 casual)	12
X-ray Technicians (1 casual)	2
Clinical Laboratory Technicians (4 part-time)	5

SPECIAL EQUIPMENT-PORTABLE:	
Receivers - Med Net, Fire Net, Hickory Net, Emergency HS-Div.	4
Walkie talkies (HS Division NET)	4
Cardiac monitors and defibrillators (1 backup)	2
Crash cart-emergency equipment with E-tank O_2	1
Portable physicians bag-drugs	1
Portable suction unit	1
Portable, 1 ambulance, 3 gurney stretchers	2
Wheelchairs	3
O_2 tanks	3
Manual resuscitators	2
IV stands	2
IV solutions	q.s.*
Otoscope/ophthalmoscopes	4
Portable sphygmomanometers	6
Stethoscopes	20
Anti-c apparel	q.s.
Eye irritation solution	q.s.
Full set air splints	1
Industrial first-aid kits	1
Extrication and cervical collars, crutches, canes	q.s.
Suture sets	4

SUPPLIES-GENERAL:

Bedding/Pillows
Rescue blankets
Burn blankets
Thermal/icing pouches
Multitrauma dressings, surgical and first aid supplies
*q.s.-inventory varies as needed

TABLE D-3

Emergency Equipment
(Continued)

Emergency Equipment at the Medical Facility, HS-2, Continued:

SPECIAL FACILITIES - NONPORTABLE:

Completely equipped emergency room with ambulance entrance
Emergency lighting system
Complete X-ray suite
Contamination showers, protective clothing and wound counters
12 lead electrocardiograph
Fully equipped CRASH Cart with Life Pak, intubation equipment, emergency drugs, etc.
Fully equipped decontamination room at Los Alamos Medical Center adjacent to LAMC Emergency Room

TRANSPORTATION:

Full ambulance service is available within minutes to the central facility and all satellite clinics.
1980 Dodge Van

COMMUNICATION:

Base station on State Medical Net

TABLE D-4

Emergency Management Office
Emergency Managers[a]

Emergency Managers	Laboratory Telephone	Home Telephone	Home Address
James S. Griffiths	667-6211	662-9155	190 Manhattan Loop, Los Alamos, New Mexico
Gary W. Bequette	667-6211	662-4554	2369-B 33rd Street, Los Alamos, New Mexico
Frank G. Pearce	667-6211	984-8901	110 Delgado Street, Santa Fe, New Mexico
Deanna M. Seitz	667-6211	662-7356	65 San Juan, Los Alamos, New Mexico
James A. Walton	667-6211	455-3316	Route 11, Box 20, Space 19, Santa Fe, New Mexico

[a]To ensure immediate response, the Emergency Manager may be reached at the Emergency Management Office, 667-6211, or after hours, 667-7080.

TABLE D-5

Waste Analysis Parameters and Test Methods[a]

Parameter	Test Method	Reference[b]
Ignitability	Pensky-Martens	(L) SW1010
	Closed-Cup Method	(L) ASTM D93-80
Reactivity	Test method to determine hydrogen cyanide released from waste	(L,S) SW Section 7.3
	Test method to determine hydrogen sulfide released from waste	
Corrosivity	Electrometric (pH of aqueous solution)	(L) SW9040
Toxicity Characteristic	Toxicity Characteristic Leaching Procedure (TCLP) Extraction and Graphite Furnace AA Spectroscopy	(L,S) Method SW1311
Arsenic		(L) SW7060
Barium		(L) SW7081, SW7080
Cadmium		(L) SW7131, SW7130
Chromium		(L) SW7191, SW7190
Lead		(L) SW7421, SW7420
Selenium		(L) SW7740
Silver		(L) SW7761, SW7760
Mercury	TCLP Extraction and Manual Cold Vapor Technique	(L) SW7470
Volatile Organics	TCLP Extraction and Gas Chromatography/Mass Spectrometry (GC/MS)	(L) SW8240
	GC/MS Capillary Column Technique	(L) SW8260
Semivolatile Organics	TCLP and GC/MS	
	Packed Column Technique	(L) SW8250
	GC/MS Capillary Column Technique	(L) SW8270
Organochlorine Pesticides	TCLP Extraction and Gas Chromatography	(L) SW8080
Chlorinated Herbicides		(L) SW8150
Chemical Composition	95% organic composition by GC/FID	(L) SW8100

TABLE D-5

Waste Analysis Parameters and Test Methods
(Continued)

Parameter	Test Method	Reference
Trace Organic Analysis	Any of the following:	
	Volatile organic compounds - GC/MS	(L) SW8240
	Semivolatile organic compounds - GC/MS	
	- Packed column	(L) SW8250
	- Capillary column	(L) SW8270
Heat Value	Bomb calorimeter	(L) A006, ASTM D240
Organic Chloride	Halide titration of combustion residue	(L,S) A004, ASTM D2361
Ash Content	Residue after combustion in muffle furnace (S) A001, ASTM D3174	(L) A001, ASTM D482
Cyanide, Free and Total	Distillation and colorometric (UV)	(L) SW9012
Total Chromium	Colorimetric method for hexavalent chromium	(L) SW7196
Sulfide	Colorimetric titration	(L) SW9030
Total Metals[c]	Acid Digestion	(L,S) SW3020
	Inductively Coupled Plasma-Atomic Emission Spectroscopy (ICP)	(L) SW6010
Arsenic		(L) SW6010
Barium		(L) SW6010
Beryllium		(L) SW6010
Cadmium		(L) SW6010
Chromium		(L) SW6010
Lead		(L) SW6010
Nickel		(L) SW6010
Selenium		(L) SW6010
Silver		(L) SW6010
Thallium		(L) SW6010
Zinc		(L) SW6010

TABLE D-5

Waste Analysis Parameters and Test Methods
(Continued)

Parameter	Test Method	Reference
Mercury	Manual Cold Vapor Technique	(S) SW7471 (L) SW7470
Free Liquids	Paint Filter Liquids Test	(S) SW9095

[a]At Los Alamos National Laboratory, standard test methods for organics are used on mixed waste samples that do not exceed one millicurie per gram or one millicurie per liter. Standard test methods for inorganics are used on mixed waste samples that do not exceed 100 picocuries per gram or 100 nanocuries per liter. Gross alpha, beta and gamma screening is performed for mixed waste samples.

[b]"A" refers to *Sampling and Analysis Methods for Hazardous Waste Combustion*, EPA-600/8-84-002, February 1984.
"ASTM" refers to the American Society for Testing Material Standards.
"SW" refers to *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, 3rd Edition, EPA, November 1986.
"L" refers to liquid waste.
"S" refers to solid waste.
See 55 FR 11863.

[c]See also Atomic Absorption Methods listed under TCLP.

TABLE D-6

Items Monitored at the Controlled Air Incinerator (TA-50-37) During an Emergency Shutdown

Item	Monitored For
Incinerator/equipment	Functioning
Pumps, valves, pipes	Leaks
Tank bypass	Leaks
Emergency waste feed cut-off system	Functioning
HEPA Filtration System	Functioning
Radiation	Levels

TABLE D-7

Evacuation Determination and Reentry[a]

Reason for Evacuation	Evacuation Determination Made By	Reentry Conditions
Fire	Fire or evacuation alarm, Group Leader, Alternate, Lead Engineer, Senior Staff Member present, or Emergency Manager	Following survey by the Chief Fire Officer, HS-1 and/or HS-5, and R&D Supervision
Explosion	Same as above	Same as above
Loss of Ventilation	Group Leader, Alternate, Senior Staff Member, Lead Engineer, or Senior Technician	Following survey by HS-1 and/or HS-5, and R&D Supervision
Loss of Electic Power	Same as above	Same as above
Extensive Contamination	Same as above or HS-1 Representative	Same as above
Airborne Contamination	Same as above or Radiation Monitor	Same as above
Escape or Release of Toxic or Hazardous Gas or Fumes	Group Leader, Alternate, Senior Staff Member, Lead Engineer, Senior Technician, or Emergency Manager	Same as above plus HS-5
Bomb Threat	HS-3 or Protective Force Representative, R&D Section Leader, Alternate, Senior Staff Member, Lead Engineer, or Emergency Manager	Following determination by HS or Protective Force Representative and R&D Supervision

[a]All reentries are authorized by the Incident Commander.

ATTACHMENT D-1

Memorandum of Understanding, DE-GM32-92AL82509,
The U.S. Department of Energy and the Incorporated County of Los Alamos,
State of New Mexico for Mutual Aid Assistance

MEMORANDUM OF UNDERSTANDING

DE-GM32-92AL82509

THE U. S. DEPARTMENT OF ENERGY

AND

THE INCORPORATED COUNTY OF LOS ALAMOS

STATE OF NEW MEXICO

FOR

MUTUAL AID ASSISTANCE

MEMORANDUM OF UNDERSTANDING
BETWEEN THE
UNITED STATES DEPARTMENT OF ENERGY
LOS ALAMOS AREA OFFICE

AND THE

INCORPORATED COUNTY OF LOS ALAMOS, NEW MEXICO

CONCERNING

MUTUAL AID AND EMERGENCY RESPONSE

INTRODUCTION:

THIS MEMORANDUM OF UNDERSTANDING (MOU) is between the United States of America (the Government), Department of Energy (DOE), Los Alamos Area Office (LAAO), and the Incorporated County of Los Alamos, State of New Mexico (County).

WHEREAS, both parties have certain responsibilities for protecting the public; and

WHEREAS, both parties have developed and maintain capabilities to accomplish their respective responsibilities; and

PURPOSE:

WHEREAS, both parties recognize that developing and maintaining a program of mutual assistance will enhance each party's ability to accomplish its responsibilities in a more effective and efficient manner; and

WHEREAS, both parties are willing to enter into this MOU;

AUTHORITY:

WHEREAS, the DOE is authorized to enter into this MOU by Public Law 95-91; and DOE Order 1280.1A, dated November 15, 1991; and

WHEREAS, The County is authorized to enter into this MOU by Article I, Sections 100 and 103 of the Charter for the Incorporated County of Los Alamos, Sections 2.50.020, 2.48.020, 2.16.010 and 2.16.020 of the Los Alamos County Code, the New Mexico Constitution, Art. X, Section 6 and the Community Right to Know Act of 1986 (SARA Title III), Sections 301-303 and Section 12-10-6 NMSA, 1978.

NOW, THEREFORE, it is understood and agreed by the parties that the MOU will be as follows:

MANAGEMENT AND PROGRAM GUIDELINES:

1. The DOE will provide assistance to the County, when requested, for the following:

   a. Bomb threats, bomb and explosive incidents;
   b. Hazardous material emergencies or incidents; and
   c. Natural disasters, or "Acts of God," affecting the County.

   The County will provide assistance for emergencies to DOE, when requested, for Los Alamos police assistance, highway maintenance equipment, and use of County buildings and facilities on an as-needed basis.

   DOE and County assistance will be rendered to each entity within the incorporated boundary of Los Alamos County and areas outside the County to the extent provided for through other MOUs between the DOE, the County and other jurisdictions.

2. Both the DOE and the County reserve the right to determine the extent of the assistance either will render to the other in response to requests for assistance.

3. Mutual Aid Response Procedures will be developed and updated annually, specifying the policies and procedures to be followed in implementing this MOU.

4. The DOE and the County covenant and agree that no claim for compensation will be made against each other for any loss, damage, personal injury, or death occurring in consequence of bomb threat, natural disaster or hazardous material response assistance rendered under this agreement, and all such rights or claims are hereby expressly waived.

5. Notwithstanding any other term, condition or provision of this MOU, nothing contained in this MOU shall in any way alter the County's rights, privileges, immunities or protection under the New Mexico Tort Claims Act, Section 41-4-1, NMSA, 1978.

6. A copy of this MOU will be provided by LAAO to the Los Alamos Police and Fire Departments, the University of California Regents, the DOE Albuquerque Field Office, the Los Alamos Medical Center, the Los Alamos Schools, and the State of New Mexico, after it has been signed by both parties.

7. This MOU shall not be used to obligate or commit funds or as the basis for the transfer of funds.

8. Subject to the Freedom of Information Act (5 U.S.C. 5520), decisions on disclosure of information to the public regarding this MOU shall be made by DOE following consultation with the County-designated representative.

9. This MOU shall become effective upon the latter date of signature of the parties. It shall remain in effect for a 5-year term from the effective date. It may be terminated by the mutual written agreement of DOE and the County or by either party upon 30-day written notice to the other party.

Accepted on Behalf of the DOE by the:

Area Manager, Los Alamos Area Office Date 1-14-93

Accepted on Behalf of the County by the:

Los Alamos County Administrator Date 1-12-93

Approved as to form:

County Attorney
Assistant Date 1-13-93

LAM:6GG-026

ATTACHMENT E.2
CLOSURE PLAN
BATCH WASTE TREATMENT UNIT

MODIFICATION SUMMARY:

Proposed Modification Class - 1

Class Citation - 40 CFR Appendix I to § 270.42, A.1 and D.1.c

Summary of Changes -

The proposed modifications to the closure plan for the Batch Waste Treatment Unit involve corrections in existing language and change in date of closure.

Redline/strikeout conventions are used to indicate additions and deletions from the existing text, respectively.

The majority of proposed modifications are simple clarifications in language, corrections of typographical errors, and changes in organizational titles or affiliations. The change in date of closure for the Batch Waste Treatment Unit reflects a decision by the Laboratory to close this unit in accordance with the proposed closure plan, but does not constitute formal notification of partial closure.

CLOSURE PLAN

BATCH WASTE TREATMENT UNIT

E.2. Batch Waste Treatment Unit and Container Storage Area

The Batch Waste Treatment Unit is located in Building 1 at Technical Area 50 (Figure E.2.1). The system consists of a totally enclosed, vented, 500-gallon pressure vessel equipped with a filtering system, condenser, and vacuum transfer lines. Total system washdown between batches allows for the treatment of incompatible wastes in the unit. Wastes treated in the Batch Waste Treatment Unit include cyanide, chromate plating solutions, and solutions of acids, bases and heavy metals. The batch treatment equipment is mounted on a crack-free concrete floor that is curbed to contain the contents of the process equipment should a leak occur.

A waste transfer and packaging area is also housed in the room in which the Batch Waste Treatment Unit is located. This area consists of a small space that is covered with a ventilation hood. Small quantities of waste are repacked within this area, when necessary.

E.2.1. Estimate of Maximum Waste in Storage

The maximum inventory of hazardous wastes in storage or treatment at the Batch Waste Treatment Unit, including drum storage and pipe and vessel inventory, is estimated at 5 cubic meters (1,300 gallons).

E.2.2. Description of Waste Handled

Three waste streams compose the bulk of the waste treated in the Batch Waste Treatment Unit, although the system is flexible enough to allow treatment of other wastes that may be generated through new Laboratory projects. These streams are an acid/base waste that contains copper, chromate plating waste, and waste cyanide plating solutions. Treatment includes neutralization of acids and bases, decomposition of cyanides and precipitation of metals.

Upon completion of treatment, the resulting solution is filtered and the filtered liquid discharged to either the effluent tank/headworks at the industrial wastewater treatment plant or containers for disposal as hazardous waste. The effluent from the industrial wastewater treatment plant is discharged under a NPDES permit. Metal sludges recovered in the filters are taken to TA-54, Area L for storage, sampling, analysis and off site disposal at a permitted facility.

E.2.3. Closure Procedures and Decontamination

E.2.3.1. Partial Closure

No partial closure of this unit is expected to occur. Any decontamination necessary to perform maintenance, with no intention to remove the unit, is not considered partial closure.

E.2.3.2. Final Closure

Wastes in storage at the initiation of closure will be either shipped off site for disposal or treated using the standard operating procedure (SOP) for the waste, and no more waste will be received. Following the treatment of the last waste, the system will be washed down using the facility's washdown system, and the resulting liquid will be discharged to the industrial wastewater sewer in accordance with standard operating procedures. Following washdown, the system filter cartridges will be replaced with new cartridges. The used cartridges will be placed in drums and transferred to TA-54, Area L for storage and sampling, analysis and off site disposal at a permitted facility. The equipment will then be charged with a Liquinox(@) or Alconox(@) solution in water and circulated and flushed for two hours. Following circulation, the solution will be sampled and analyzed for hazardous constituents to verify decontamination, then pumped into drums and transported to TA-54, Area L for shipment off site. If analysis of the solution indicates contamination, a new filter will be installed and additional washings will be conducted until decontamination is verified. Following successful internal decontamination, the filter cartridges will be removed, placed in drums and transported to TA-54, Area L, for sampling, analysis and off site disposal at a permitted facility.

When internal decontamination is complete, the outside of the equipment will be scrubbed and rinsed with a warm solution of Liquinox(@) or Alconox(@) in water. The cleaning solutions will accumulate in the curbed area and will be pumped into drums with a small manually operated drum pump. Samples of this solution will be taken from the drum to verify decontamination. Washdown will be repeated until decontamination is verified. The contained liquid will be transported to TA-54, Area L for sampling, analysis and shipment off site for treatment and/or disposal.

Upon successful external decontamination, the equipment will be disassembled and internally inspected. Any residual matter found will be scraped or brushed off the area where the residue occurred, then washed and rinsed. Dry residues will be placed in approved DOT containers for transport to TA-54, Area L for sampling, analysis and off site disposal at a permitted facility. Liquids from washing and rinsing will be placed in drums and transported to TA-54, Area L for sampling, analysis and off site disposal. Cleaned equipment will be removed from the building and handled as a nonregulated waste.

Following removal of the batch treatment equipment, the floor within the curbed area and the waste handling hood will be washed and rinsed with a warm Liquinox(@) or Alconox(@) solution in water. The wash water will be picked up and put in drums using a drum pump, rags and/or mops, wringing the excess water into a drum. This water will be sampled to demonstrate decontamination. Regulated wastes or residues will be shipped off site for treatment or disposal.

Personnel involved in disassembly and handling of equipment will wear protective equipment, including: acid resistant coveralls, head protection, neoprene-coated gloves, and boots. Wrists and ankles are to be taped to protect against upward and inward splash. As a minimum protection, face shields will be worn. Full face respirators will be used if specified by the Laboratory's Industrial Hygiene Group, ~~HSE-5~~ HS-5, following a field inspection.

Spills occurring during equipment disassembly will be contained in the curbed area and will be picked up with mops. No decontamination of container handling

equipment is anticipated during closure because the wastes are inside containers and no contact is expected between wastes and handling equipment. If a container is breached, the handling equipment involved will be decontaminated by washing as above. If the spill occurs outside the curbed area, the spilled materials will be absorbed and cleaned as above. The spill area will be included in the final decontamination verification washdown. All spill residues will be handled in accordance with applicable hazardous waste regulations.

Protective clothing, coveralls, face shields, and boots worn during the wash down will be rinsed in clean water while the items are within the curbed area. The rinse water will be handled with the dirty water from the external wash down. Following internal and external decontamination, the equipment will be considered free from regulated wastes. Protective clothing will be worn by personnel disassembling the equipment. The protective clothing and tools used during disassembling will be washed with detergent and water. The wash water will be collected and analyzed. If the wash water is nonhazardous, the water will be discharged to the industrial waste water sewer. If the wash water contains hazardous constituents, it will be treated on site or transported off site to a permitted disposal facility. Mops and rags used for cleanup will be placed in drums for transport to TA-54, Area L, for sampling, analysis and off site disposal at a permitted facility.

E.2.4. Decontamination Verification

Before the first wash down two samples will be taken of the clean Liquinox(@) or Alconox(@) solution in water and analyzed for the constituents listed in Table E.2.2.

One additional clean solution sample will be taken for each additional washdown event. These analytical results provide background data for decontamination verification.

Dirty washdown solutions will also be analyzed for the constituents listed in Table E.2.2. Analytical procedures will conform to methods found in SW-846. Equipment will be considered to be contaminated if the used wash solutions show a significant increase in the listed constituents over the clean wash solution.

The constituents listed in Table E.2.2. include regulated constituents normally stored and treated in the plant, and additional metals that may have been inadvertently included in treated solutions. A scan for volatile and semivolatile organics ~~is~~ will be performed to ensure that solvents commonly used within the Laboratory have not contaminated the equipment.

Successful decontamination is defined as:

1. No detectable hazardous constituents in the final sample, or
2. Detectable hazardous constituents in the final sample are equal to or less than, at the 0.01 confidence level, their concentration in the unused washwater or background sample.

An alternative demonstration of decontamination may be proposed and justified at the time of closure as circumstances indicate. The Director will evaluate the proposed alternative in accordance with the standards and guidance then in effect and, if approved, incorporate by permit modification the alternative into the closure plan.

E.2.5. Closure Schedule

The year of closure for the TA-50-1 Batch Waste Treatment Unit is ~~2100~~ 1993. Closure will observe the schedule given in Table E.2.1. The contract for equipment disassembly is expected to exceed $100,000. Because Laboratory policy requires that the work be put out for bid, 90 days are required to solicit and process the bids. The selection of a contractor will be made before closure begins. Closure is estimated to take 210 days.

E.2.6. Closure Certification

An independent registered professional engineer and the Permittee shall witness the closure and ensure that the closure follows this plan. Upon completion of closure, the engineer and the DOE shall prepare a letter certifying that the facility has been closed in accordance with this plan. The letter shall be dated and signed by each party, stamped by the registered engineer, and the original copy submitted by the DOE to the ~~Director~~ Secretary of ~~NMEID~~ NMED. One copy shall be maintained at the DOE office and one copy maintained by the ~~HSE-8~~ EM-8 Regulatory Compliance Section.

E.2.7. Sampling and Analytical Procedure

The following section defines procedures and methods for sampling, analysis and documentation applicable to closure plans. While the procedures and method are specific, any applicable procedure or method given in SW-846 may be used if conditions or experience shows the alternate method to be more appropriate. All analytical procedures actually used will be annotated in the final closure report. Disposable samplers may be used.

Samples will be taken, placed in bottles, sealed, tagged, and immediately packed in vermiculite, sawdust, or, if refrigeration is required, an insulated container with ice. One sample for every ten samples will be either duplicated or split. The duplicated or split sample will be identified by a code so that its source is not available to the analytical laboratory, but analytical results can be compared to its twin.

Sample containers appropriate for the requested analyses will be used for all samples. Sampling will be conducted in accordance with procedures given in *Samplers and Sampling Procedures for Hazardous Waste Streams*, EPA 600/2-80-018 and/or SW-846.

E.2.7.1. Solid Residues Sampling

The sampling procedures outlined below are used to determine the amount of hazardous material in a container or to determine the leaching rate of the material. Adequate preparation ensures that proper sampling is accomplished. Residues left on the concrete surface will be sampled and analyzed. Drums of solid residues will be sampled with a core sampler or a Veihmeyer soil sampler. Drums not capable of being sampled will be assumed to be hazardous waste.

E.2.7.1.1. Cleaning of Sampler

It is important to clean the samplers after each site is sampled. An unused disposable sampler may be presumed clean if still in a factory sealed wrapper. Unsealed samplers will be cleaned prior to use. The samplers will be washed with a warm Liquinox(@) or Alconox(@) solution, rinsed several times with tap water, rinsed with distilled water, drained of excess water, and air-dried or wiped dry. Prevention of cross contamination is of particular importance in these

samples.

E.2.7.1.2. Sampling Procedures

Trowel or Scoop

- Take small, equal portions of sample from the surface or near the surface of the material to be sampled.
- Combine the samples in a glass container.
- Cap the container, attach a label and seal, record in field log book, and complete the sample analysis request sheet and chain-of-custody record.

Veihmeyer Sampler

- Assemble the sampler by screwing in the tip and drive head on the sampling tube.
- Insert the tapered handle (drive guide) of the drive hammer through the drive head.
- Place the sampler in a perpendicular position on the material to be sampled.
- With the left hand holding the tube, drive the sampler into the ground/material to the desired sampling depth by pounding the drive head with the drive hammer. Do not drive the tube further than the tip of the hammer's drive guide.
- Record the length of the tube that penetrated the material.
- Move the drive hammer onto the drive head. In this position, the hammer serves as a handle for the sampler.
- Rotate the sampler at least two revolutions to shear off the sample at the bottom.
- Lower the sampler handle (hammer) until it just clears the two ear-like protrusions on the drive head and rotate about 90 degrees.
- Withdraw the sampler from the material by pulling the handle (hammer) upwards. When the sampler cannot be withdrawn by hand, as in deep soil sampling, use a pullerjack and grip.
- Dislodge the hammer from the sampler, turn the sampler tube upside down, tap the head gently against the hammer, and carefully recover the sample from the tube. The sample should slip out easily.
- Store the core sample in a 1,000 or 2,000 ml (1 qt or l/2 gal) sample container.
- Label the sample, affix the seals, record in the field log book, complete the sample analysis request sheet and chain-of-custody record, and deliver the samples to the laboratory for analysis.

E.2.7.2. Liquid Sampling

A Coliwasa sampler or similar device will be used to sample water solutions in order to determine background parameters before washing the area; it will also be used to sample the dirty wash water used in cleaning equipment. The recommended model of the Coliwasa is shown in Figure E.2.2, the main parts consisting of the sampling tube, the closure-locking mechanism, and the closure system. As an alternative to the Coliwasa, glass tubes may be used to sample liquids. The primary advantage in using a glass tube is that the tube will be disposed of as hazardous waste after each sample is collected, thus eliminating the potential for cross contamination.

E.2.7.2.1. Cleaning of Sampler

The sampler must be clean before use. An unused disposable sampler may be presumed clean if still in a factory sealed wrapper. Unsealed samplers will be cleaned prior to use. The used sampler must be washed with a warm detergent solution (Liquinox(@) or Alconox(@)), rinsed several times with tap water, rinsed with distilled water, drained of excess water, and air-dried or wiped dry. A necessary piece of equipment for cleaning the tube of the Coliwasa is a bottle brush that fits tightly inside the diameter of the tube. The brush is connected to a rod of sufficient length to reach the entire length of the sampler tube. Using the ramrod and fiber reinforced paper towels, the Coliwasa tube may be quickly cleaned. Improper cleaning of sample equipment will cause cross contamination of samples. Prevention of contamination is of particular importance in these samples. Clean samplers should be stored in polyethylene plastic tubes or bags in a clean an protected area.

E.2.7.2.2. Sampling Procedures

- Assemble the Coliwasa sampler.
- Make sure that the Coliwasa sampler is clean.
- Check to make sure the sampler is functioning properly. Adjust the locking mechanism, if necessary, to make sure the neoprene rubber stopper provides a tight closure.
- Wear necessary protective clothing and gear and observe required sampling precautions.
- Put the sampler in the open position by placing the stopper rod handle in the T-position and pushing the rod down until the handle sits against the sampler's locking block.
- Slowly lower the Coliwasa sampler into the liquid at a rate that permits the levels of the Liquid inside and outside the sampler tube to be about the same. If the level of the liquid in the sampler tube is lower than that outside the sampler, the sampling rate is too fast and will result in a nonrepresentative sample.
- When the sampler stopper hits the bottom of the liquid container, push the sampler tube downward against the stopper to close the sampler. Lock the sampler in the closed

position by turning the T-handle until it is upright and one end rests tightly on the locking block.

- Slowly withdraw the sampler from the container with one hand while wiping the sampler tube with a disposable cloth with the other hand.

- Carefully discharge the sample into a glass container by slowly opening the sampler. This is done by slowly pulling the lower end of the T-handle away from the locking block while the lower end of the sampler is positioned in the glass container.

- Cap the glass container, attach a label and seal, record in the field log book, and complete the sample analysis request sheet and chain-of-custody record.

- Unscrew the T-handle of the sampler and disengage the locking block. Clean the sampler on site or store the contaminated parts of the sampler in a plastic storage tube or bag for subsequent cleaning. Store used rags in plastic bags for subsequent disposal.

E.2.7.3. Sample Handling and Documentation

Soil and liquid samples will be analyzed either at LANL or at a commercial laboratory. In either case, each sample will be labeled, sealed, and accompanied by a chain-of-custody and a sample analysis request form.

The sample container must be sealed with a gummed paper seal attached to the container in such a way that the seal must be broken in order to open the container. The seal and sample tag must be completed with a waterproof pen. An example of a sample seal is shown in Figure E.2.3.

The sample label is necessary to prevent misidentification of samples and shall include, if applicable, the grid number referenced to positions staked on the site perimeter. The "field information" in the case of soil sampling, shall include observations such as the soil texture and surface appearance, ambient temperature and cloud cover at time of sampling, and precipitation conditions 24 hours before sampling. An example of a sample label is shown in Figure E.2.4.

The chain-of-custody form is necessary to trace sample possession from the time of collection and must accompany every sample. This record becomes especially important when the sample is to be introduced as evidence in litigation. This is a two-page record with the original accompanying shipment and the "copy" retained by the Laboratory. An example of this form is shown in Figure E.2.5.

A separate closure sampling field log book will be kept and will contain all information pertinent to field surveys and sampling. The log book shall have bound and consecutively numbered pages in 8-1/2 by 11-inch format. Minimum entries include:

a. Purpose of sample (routine sampling, special sampling),

b. Location of sampling (coordinates referenced to staked field points, if soil sample),

c. Name and address of person making log entry,

d. Type of process producing waste,

e. Number and volume of sample,

f. Description of each sampling location, sampling methodology, equipment used, etc.,

g. Date and time of sample collection,

h. Sample destination and transporter's name (name of laboratory, UPS, etc),

i. Map or photograph of the sampling site, if any,

j. Field observations (ambient temperature, sky conditions, past 24-hour precipitation, etc),

k. Field measurements, if any (pH, flammability, conductivity, explosivity, etc),

l. Collector's sample identification number(s), and

m. Signature of person responsible for the log entry.

Sampling situations vary widely. No general rule can be given as to the extent of information that must be entered in the log book. A good rule, however, is to record sufficient information so that someone can reconstruct the sampling situation without relying on the collector's memory.

The sample shipment and chain-of-custody record is accompanied by a sample analysis request sheet. The request sheet has two parts: field and laboratory. The field portion of this form must be ~~completely~~ completed by the person collecting the sample and include most of the pertinent information noted in the log book. The laboratory portion is intended to be completed by the laboratory personnel when the sample is received.

E.2.8. Quality Assurance/Quality Control

The Permittee shall designate a qualified individual or individuals to independently oversee the closure activities and report directly to senior management on the quality of the performance of this closure. This individual will personally observe a portion of the key activities, assure that sample blanks are used and analyzed and review the analysis reports for accuracy and adequacy. A written QA/QC plan in accordance with SW-846 guidance shall be prepared and followed, with variations from the plan documented and explained. The designated individual shall prepare a written statement for the final report commenting on the adequacy of the analysis showing decontamination.

E.2.9. Final Closure Report

Upon completion of the closure activities, the Permittee shall submit a Final Closure Report to the Director. The report shall document the final closure and contain, at a minimum, the following:

A. The certification described in paragraph E.2.6.

B. Any variance from the approved activities and the reason for the variance.

C. A tabular summary of all sampling results, showing:

1. Sample identification,

2. Sampling location,

3. The datum reported,

4. Detection limit for each datum,

5. A measure of analytical precision (e.g. uncertainty, range, variance),

6. Identification of analytical procedure, and

7. Identification of analytical laboratory.

D. A QA/QC statement on the adequacy of the analyses and decontamination demonstration.

E. The location of the file of supporting documentation:

1. Field log books,

2. Laboratory sample analysis reports,

3. The QA/QC documentation, and

4. Chain of custody records.

F. Disposal location of all regulated and nonregulated residues.

G. A certification of accuracy of the report.

TABLE E.2.1.

CLOSURE SCHEDULE

ACTIVITY	MAXIMUM TIME REQUIRED
Notify ~~EID~~ NMED of the closure	-90 Days
Let contract request for proposals	-90 Days
Receive proposals	-30 Days
Select and award Contract	-10 Days
Begin closure activities	Day 0
Treatement of final wastes	Day 30
Internal wash down	Day 40
External wash down	Day 60
Equipment disassembly	Day 130
Floor wash down	Day 140
Final clean up	Day 160
Decontamination verification	Day 180
Submittal of final report to ~~EID~~ NMED	Day 210

NOTE:

The calendar days given above are completion dates for each activity. In some cases more than one activity may occur simultaneously.

TABLE E.2.2.

ANALYTICAL PARAMETERS

METALS	ORGANICS
Arsenic	Halogenated volatile organics
Barium	Nonhalogenated volatile organics
Cadmium	Acid-extractable semivolatile organics
Chromium	Base-neutral extractable semivolatile organics
Lead	
Mercury	
Selenium	
Silver	
Nickel	
Beryllium	

OTHER

Cyanides
pH

NOTE:

Analytical methods are taken from *Test Methods for Evaluating Solid Waste*, EPA SW-846, and may be superseded by more current methods from SW-846 or alternate EPA-approved methods.

Metals may be analyzed for total content. Any metal whose total concentration exceeds the standard for ~~Extraction Procedure Toxicity~~ Toxic Characteristic Leaching Procedure (TCLP) shall be analyzed ~~by Extraction Procedure Toxicity procedures~~ using TCLP methods. Both data shall be reported in the final report.

TABLE E.2.3

SAMPLING SUMMARY

MATERIAL SAMPLED	METALS	ORGANICS	OTHER
Internal tank washwater (after)	X	X	X
External tank washwater (before)	X	X	X
External tank washwater (after)	X	X	X
Floor washwater (before)		X	
Floor washwater (after)		X	
Solid wastes & residues	X	X	X

NOTE:

Analytical parameters are given in Table E.2.2.

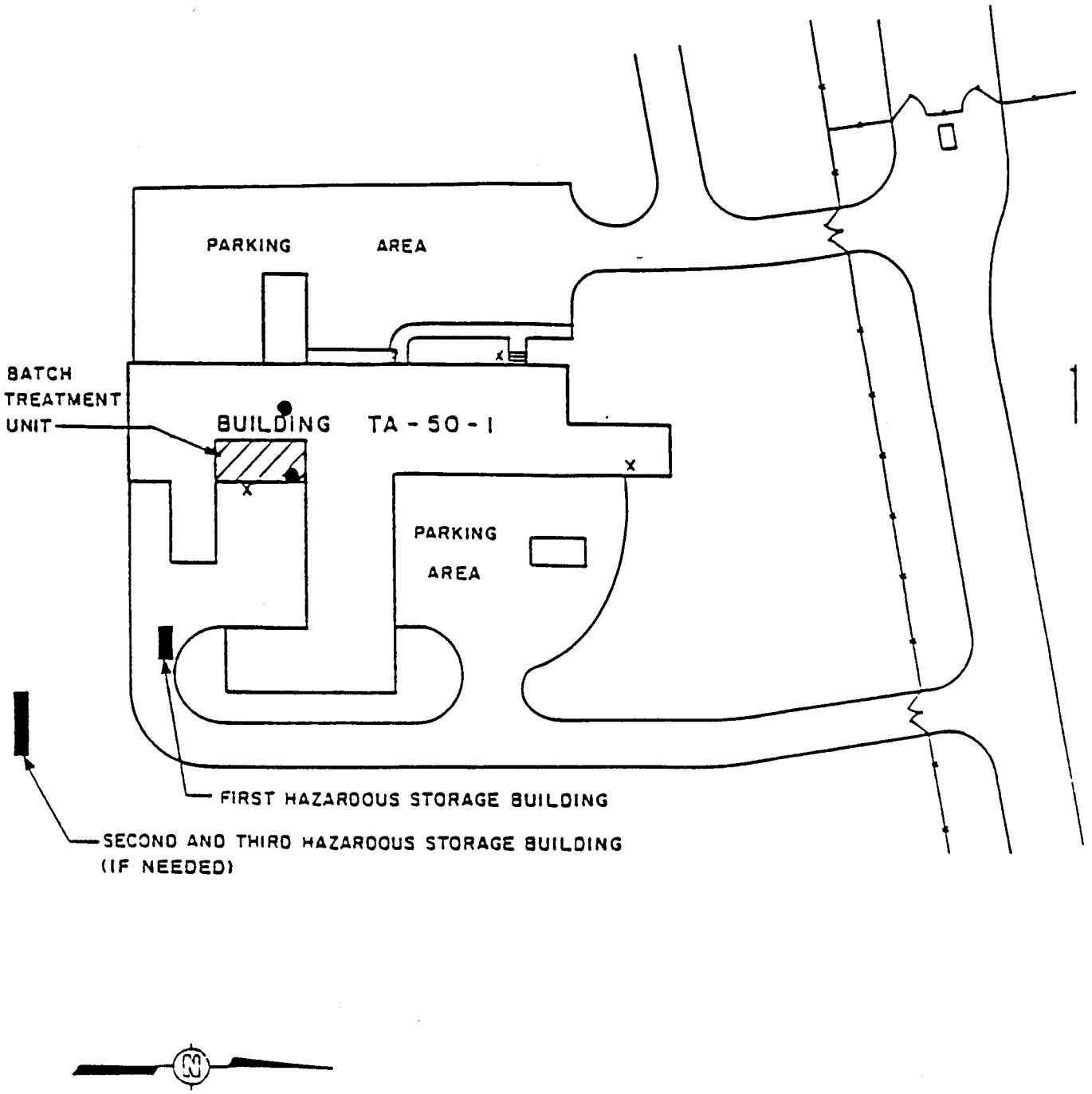

FIGURE E.2-1 BATCH TREATMENT UNIT BUILDING TA-50-1

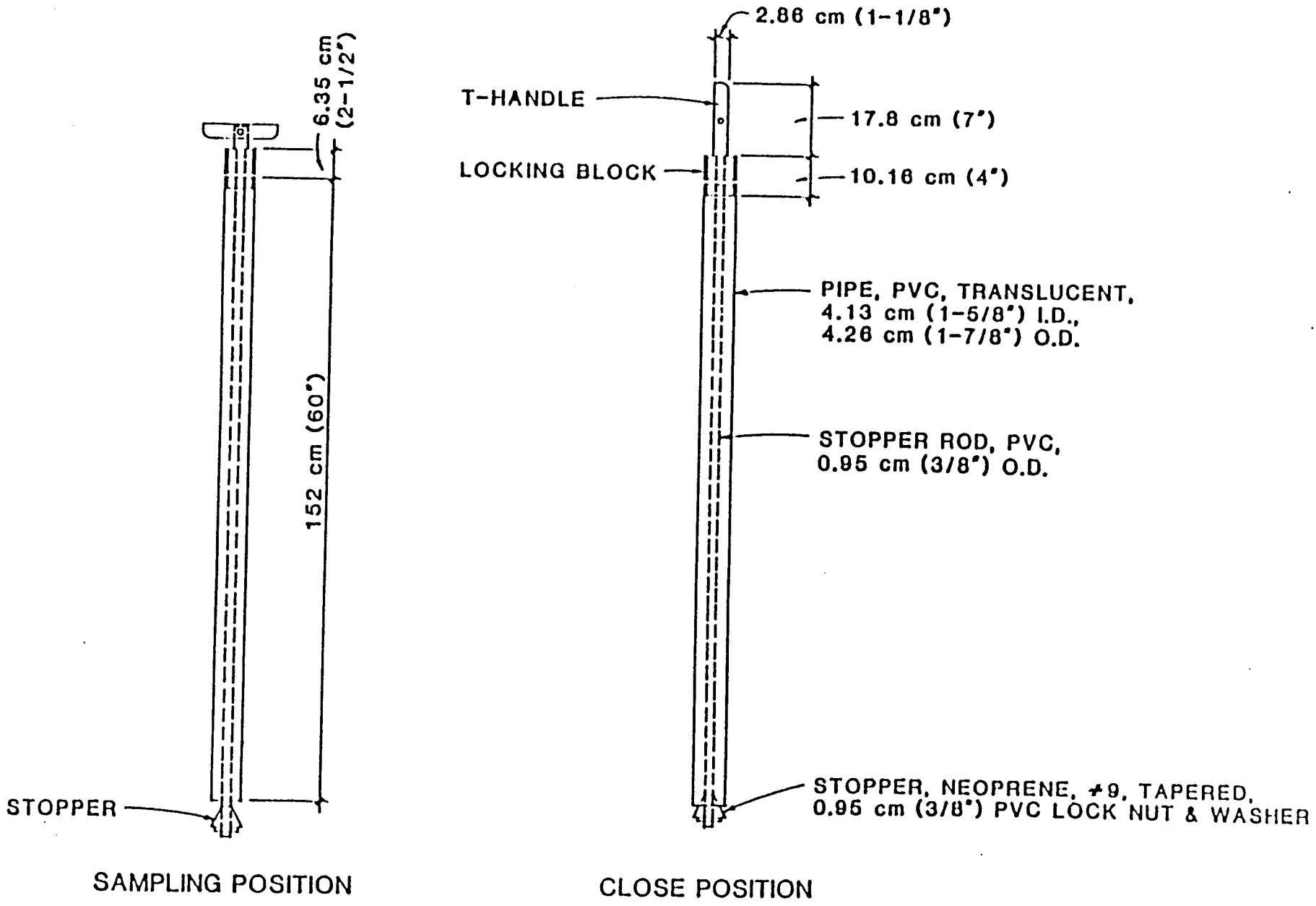

FIGURE E-2.2 - COMPOSITE LIQUID WASTE SAMPLER (COLIWASA)

OFFICIAL SAMPLE SEAL

Collected by__ Collector's sample No._____
(Signature)

Date Collected_____ Time Collected_____

Place Collected_____

_____

_____

FIGURE E.2-3 EXAMPLE OF SAMPLE SEAL

OFFICIAL SAMPLE LABEL

Collector_____ Collector's Sample No._____

Place of Collection_____

_____

Date Sampled_____ Time Sampled _____

Field Information_____

FIGURE E.2-4 EXAMPLE OF SAMPLE LABEL

Hazardous Materials
Collector's Sample No.___

Location of Sampling: __Producer __Hauler
__Disposal Site
__Other:_____

Company's Name _____Telephone (___)_____

Address_____
number street city state zip

Collector's Name_____Telephone (___)_____
signature

Date Sampled_____Time Sampled_____hours

Type of Process Producing Waste_____

Waste Type Code_____Other_____

Field Information_____

Sample Allocation:

1. _____
name of organization

2. _____
name of organization

3. _____
name of organization

Chain of Possession:

1. _____ _____ _____
signature title inclusive dates

2. _____ _____ _____
signature title inclusive dates

3. _____ _____ _____
signature title inclusive dates

FIGURE E.2-5 CHAIN OF CUSTODY RECORD

ATTACHMENT E.10
CLOSURE PLAN
BARIUM SANDS
TRUCK-MOUNTED-CONTAINER
TREATMENT SYSTEM

MODIFICATION SUMMARY:

Proposed Modification Class - 1

Class Citation - 40 CFR Appendix I to § 270.42, A.1

Summary of Changes -

This is a new section proposed for addition to Attachment E of the Permit as the closure plan for the proposed Barium Sands Truck-Mounted-Container Treatment System.

CLOSURE PLAN

BARIUM SANDS
TRUCK-MOUNTED-CONTAINER
TREATMENT SYSTEM

E.10. Barium Sands Truck-Mounted-Container Treatment System

The Barium Sands Truck-Mounted-Container Treatment System (TMCTS; Figure E.10.1) is located during operation at Technical Area 54 in TA 54-35. The TMCTS consists of a truck-mounted mixing container, a dust containment and recycling system, reagent containers for water, acid, gypsum, and cement. During operation, the TMCTS will be located on a crack-free concrete floor that is curbed to contain the contents of the process equipment should a leak occur.

E.10.1. Estimate of Maximum Waste in Storage

The maximum inventory of hazardous wastes in storage or treatment at the TMCTS including drum storage and pipe and vessel inventory, is estimated at 5 cubic meters (1,300 gallons).

E.10.2. Description of Waste Handled

The TMCTS is designed exclusively for the treatment of barium-contaminated sands (D005) generated through the treatment of high-explosive wastes at TA-16. Treatment consists of mixing the barium-contaminated sands with sulfuric acid and gypsum (calcium sulfate), resulting in chemical precipitation of barium sulfate, followed by solidification of the wastes using cement. The solidified wastes, which meet treatment standards in accordance with HWMR-7, as amended 1992, 40 CFR § 268.43, are then land disposed at TA-54, Area J.

E.10.3. Closure Procedures and Decontamination

E.10.3.1. Partial Closure

No partial closure of this unit is expected to occur. Any decontamination necessary to perform maintenance, with no intention to remove the unit, is not considered partial closure.

E.10.3.2. Final Closure

Wastes in storage at the initiation of closure will be either shipped off site for disposal or treated using the standard operating procedure (SOP) for the waste, and no more waste will be received. Following the treatment of the last waste, the system will be washed down and the resulting liquid will be collected and analyzed for barium and other suspected hazardous contaminants prior to further treatment or disposal in accordance with standard operating procedures. If analysis of the solution indicates contamination, additional washings will be conducted until decontamination is verified.

When internal decontamination is complete, the outside of the equipment will be scrubbed and rinsed with a warm solution of Liquinox(@) or Alconox(@) in water. The cleaning solutions will accumulate in the curbed area and will be pumped into drums with a small manually operated drum pump. Samples of this solution will be taken from the drum to verify decontamination. Washdown will be repeated until decontamination is verified. The contained liquid will be analyzed prior to treatment or disposal.

Upon successful external decontamination, the equipment will be disassembled and internally inspected. Any residual matter found will be scraped or brushed off the area where the residue occurred, then washed and rinsed. Dry residues, if present, will be analyzed for barium and other suspected hazardous contaminants prior to treatment and/or off site disposal at a permitted facility. Liquids from washing and rinsing will be placed in drums, sampled, and analyzed for barium and other suspected hazardous contaminants prior to treatment and/or off site disposal. Cleaned equipment will be removed from the TA 54-35 and handled as a nonregulated waste.

Following removal of the TMCTS the floor within the curbed area and the dust hood will be washed and rinsed with a warm Liquinox(@) or Alconox(@) solution in water. The wash water will be collected and put in drums using a drum pump, rags and/or mops, wringing the excess water into a drum. This water will be sampled to demonstrate decontamination. Regulated wastes or residues will be shipped off site for treatment or disposal.

Personnel involved in disassembly and handling of equipment will wear protective equipment, including: acid resistant coveralls, head protection, neoprene-coated gloves, and boots. Wrists and ankles are to be taped to protect against upward and inward splash. As a minimum protection, face shields will be worn. Full face respirators will be used if specified by the Laboratory's Industrial Hygiene Group, HS-5, following a field inspection.

Spills occurring during equipment disassembly will be contained in the curbed area and will be picked up with mops. No decontamination of container handling equipment is anticipated during closure because the wastes are inside containers and no contact is expected between wastes and handling equipment. If a container is breached, the handling equipment involved will be decontaminated by washing as above. If the spill occurs outside the curbed area, the spilled materials will be absorbed and cleaned as above. The spill area will be included in the final decontamination verification washdown. All spill residues will be handled in accordance with applicable hazardous waste regulations.

Protective clothing, coveralls, face shields, and boots worn during the wash down will be rinsed in clean water while the items are within the curbed area. The rinse water will be handled with the dirty water from the external wash down. Following internal and external decontamination, the equipment will be considered free from regulated wastes. Protective clothing will be worn by personnel disassembling the equipment. The protective clothing and tools used during disassembling will be washed with detergent and water. The wash water will be collected and analyzed. If the wash water is nonhazardous, the water will be discharged to the industrial waste water sewer. If the wash water contains hazardous constituents, it will be treated on site or transported off site to a permitted disposal facility. Mops and rags used for cleanup will be placed in drums for accumulation prior to sampling, analysis and off site disposal at a permitted facility.

E.10.4. Decontamination Verification

Before the first wash down two samples will be taken of the clean Liquinox(@) or Alconox(@) solution in water and analyzed for the constituents listed in Table E.10.2.

One additional clean solution sample will be taken for each additional washdown event. These analytical results provide background data for decontamination verification.

Dirty washdown solutions will also be analyzed for the constituents listed in Table E.10.2. Analytical procedures will conform to methods found in SW-846. Equipment will be

considered to be contaminated if the used wash solutions show a significant increase in the listed constituents over the clean wash solution.

The constituents listed in Table E.10.2. include regulated constituents normally stored and treated in the plant, and additional metals that may have been inadvertently included in treated solutions. A scan for volatile and semivolatile organics will be performed to ensure that solvents commonly used within the Laboratory have not contaminated the equipment.

Successful decontamination is defined as:

1. No detectable hazardous constituents in the final sample, or

2. Detectable hazardous constituents in the final sample are equal to or less than, at the 0.01 confidence level, their concentration in the unused washwater or background sample.

An alternative demonstration of decontamination may be proposed and justified at the time of closure as circumstances indicate. The Secretary will evaluate the proposed alternative in accordance with the standards and guidance then in effect and, if approved, incorporate by permit modification the alternative into the closure plan.

E.10.5. Closure Schedule

The year of closure for the TA 54-35 Barium Sands Truck-Mounted-Container Treatment System is 2100. Closure will observe the schedule given in Table E.10.1. The contract for equipment disassembly is expected to exceed $100,000. Because Laboratory policy requires that the work be put out for bid, 90 days are required to solicit and process the bids. The selection of a contractor will be made before closure begins. Closure is estimated to take 210 days.

E.10.6. Closure Certification

An independent registered professional engineer and the Permittee shall witness the closure and ensure that the closure follows this plan. Upon completion of closure, the engineer and the DOE shall prepare a letter certifying that the facility has been closed in accordance with this plan. The letter shall be dated and signed by each party, stamped by the registered engineer, and the original copy submitted by the DOE to the Secretary of NMED. One copy shall be maintained at the DOE office and one copy maintained by the EM-8 Regulatory Compliance Section.

E.10.7. Sampling and Analytical Procedure

The following section defines procedures and methods for sampling, analysis and documentation applicable to closure plans. While the procedures and methods are specific, any applicable procedure or method given in SW-846 may be used if conditions or experience shows the alternate method to be more appropriate. All analytical procedures actually used will be annotated in the final closure report. Disposable samplers may be used.

Samples will be taken, placed in bottles, sealed, tagged, and immediately packed in vermiculite, sawdust, or, if refrigeration is required, an insulated container with ice. One sample for every ten samples will be either duplicated or split. The duplicated or split sample will be identified by a code so that its source is not available to the analytical laboratory, but

analytical results can be compared to its twin.

Sample containers appropriate for the requested analyses will be used for all samples. Sampling will be conducted in accordance with procedures given in *Samplers and Sampling Procedures for Hazardous Waste Streams*, EPA 600/2-80-018 and/or SW-846.

E.10.7.1. Solid Residues Sampling

The sampling procedures outlined below are used to determine the amount of hazardous material in a container or to determine the leaching rate of the material. Adequate preparation ensures that proper sampling is accomplished. Residues left on the concrete surface will be sampled and analyzed. Drums of solid residues will be sampled with a core sampler or a Veihmeyer soil sampler. Drums not capable of being sampled will be assumed to be hazardous waste.

E.10.7.1.1. Cleaning of Sampler

It is important to clean the samplers after each site is sampled. An unused disposable sampler may be presumed clean if still in a factory sealed wrapper. Unsealed samplers will be cleaned prior to use. The samplers will be washed with a warm Liquinox(@) or Alconox(@) solution, rinsed several times with tap water, rinsed with distilled water, drained of excess water, and air-dried or wiped dry. Prevention of cross contamination is of particular importance in these samples.

E.10.7.1.2. Sampling Procedures

Trowel or Scoop

- Take small, equal portions of sample from the surface or near the surface of the material to be sampled.
- Combine the samples in a glass container.
- Cap the container, attach a label and seal, record in field log book, and complete the sample analysis request sheet and chain-of-custody record.

Veihmeyer Sampler

- Assemble the sampler by screwing in the tip and drive head on the sampling tube.
- Insert the tapered handle (drive guide) of the drive hammer through the drive head.
- Place the sampler in a perpendicular position on the material to be sampled.
- With the left hand holding the tube, drive the sampler into the ground/material to the desired sampling depth by pounding the drive head with the drive hammer. Do not drive the tube further than the tip of the hammer's drive guide.
- Record the length of the tube that penetrated the material.
- Move the drive hammer onto the drive head. In this position, the hammer serves as a handle for the sampler.

- Rotate the sampler at least two revolutions to shear off the sample at the bottom.

- Lower the sampler handle (hammer) until it just clears the two ear-like protrusions on the drive head and rotate about 90 degrees.

- Withdraw the sampler from the material by pulling the handle (hammer) upwards. When the sampler cannot be withdrawn by hand, as in deep soil sampling, use a pullerjack and grip.

- Dislodge the hammer from the sampler, turn the sampler tube upside down, tap the head gently against the hammer, and carefully recover the sample from the tube. The sample should slip out easily.

- Store the core sample in a 1,000 or 2,000 ml (1 qt or l/2 gal) sample container.

- Label the sample, affix the seals, record in the field log book, complete the sample analysis request sheet and chain-of-custody record, and deliver the samples to the laboratory for analysis.

E.10.7.2. Liquid Sampling

A Coliwasa sampler or similar device will be used to sample water solutions in order to determine background parameters before washing the area; it will also be used to sample the dirty wash water used in cleaning equipment. The recommended model of the Coliwasa is shown in Figure E.10.2, the main parts consisting of the sampling tube, the closure-locking mechanism, and the closure system. As an alternative to the Coliwasa, glass tubes may be used to sample liquids. The primary advantage in using a glass tube is that the tube will be disposed of as hazardous waste after each sample is collected, thus eliminating the potential for cross contamination.

E.10.7.2.1. Cleaning of Sampler

The sampler must be clean before use. An unused disposable sampler may be presumed clean if still in a factory sealed wrapper. Unsealed samplers will be cleaned prior to use. The used sampler must be washed with a warm detergent solution (Liquinox(@) or Alconox(@)), rinsed several times with tap water, rinsed with distilled water, drained of excess water, and air-dried or wiped dry. A necessary piece of equipment for cleaning the tube of the Coliwasa is a bottle brush that fits tightly inside the diameter of the tube. The brush is connected to a rod of sufficient length to reach the entire length of the sampler tube. Using the ramrod and fiber reinforced paper towels, the Coliwasa tube may be quickly cleaned. Improper cleaning of sample equipment will cause cross contamination of samples. Prevention of contamination is of particular importance in these samples. Clean samplers should be stored in polyethylene plastic tubes or bags in a clean an protected area.

E.10.7.2.2. Sampling Procedures

- Assemble the Coliwasa sampler.

- Make sure that the Coliwasa sampler is clean.

- Check to make sure the sampler is functioning properly. Adjust the locking mechanism, if necessary, to make sure the neoprene rubber stopper provides a tight closure.

- Wear necessary protective clothing and gear and observe required sampling precautions.

- Put the sampler in the open position by placing the stopper rod handle in the T-position and pushing the rod down until the handle sits against the sampler's locking block.

- Slowly lower the Coliwasa sampler into the liquid at a rate that permits the levels of the Liquid inside and outside the sampler tube to be about the same. If the level of the liquid in the sampler tube is lower than that outside the sampler, the sampling rate is too fast and will result in a nonrepresentative sample.

- When the sampler stopper hits the bottom of the liquid container, push the sampler tube downward against the stopper to close the sampler. Lock the sampler in the closed position by turning the T-handle until it is upright and one end rests tightly on the locking block.

- Slowly withdraw the sampler from the container with one hand while wiping the sampler tube with a disposable cloth with the other hand.

- Carefully discharge the sample into a glass container by slowly opening the sampler. This is done by slowly pulling the lower end of the T-handle away from the locking block while the lower end of the sampler is positioned in the glass container.

- Cap the glass container, attach a label and seal, record in the field log book, and complete the sample analysis request sheet and chain-of-custody record.

- Unscrew the T-handle of the sampler and disengage the locking block. Clean the sampler on site or store the contaminated parts of the sampler in a plastic storage tube or bag for subsequent cleaning. Store used rags in plastic bags for subsequent disposal.

E.10.7.3. Sample Handling and Documentation

Soil and liquid samples will be analyzed either at LANL or at a commercial laboratory. In either case, each sample will be labeled, sealed, and accompanied by a chain-of-custody and a sample analysis request form.

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b. Location of sampling (coordinates referenced to staked field points, if soil sample),

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e. Number and volume of sample,

f. Description of each sampling location, sampling methodology, equipment used, etc.,

g. Date and time of sample collection,

h. Sample destination and transporter's name (name of laboratory, UPS, etc),

i. Map or photograph of the sampling site, if any,

j. Field observations (ambient temperature, sky conditions, past 24-hour precipitation, etc),

k. Field measurements, if any (Ph, flammability, conductivity, explosivity, etc),

l. Collector's sample identification number(s), and

m. Signature of person responsible for the log entry.

Sampling situations vary widely. No general rule can be given as to the extent of information that must be entered in the log book. A good rule, however, is to record sufficient information so that someone can reconstruct the sampling situation without relying on the collector's memory.

The sample shipment and chain-of-custody record is accompanied by a sample analysis request sheet. The request sheet has two parts: field and laboratory. The field portion of this form must be completed by the person collecting the sample and include most of the pertinent information noted in the log book. The laboratory portion is intended to be completed by the laboratory personnel when the sample is received.

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analysis showing decontamination.

E.10.9. Final Closure Report

Upon completion of the closure activities, the Permittee shall submit a Final Closure Report to the Secretary. The report shall document the final closure and contain, at a minimum, the following:

A. The certification described in paragraph E.10.6.

B. Any variance from the approved activities and the reason for the variance.

C. A tabular summary of all sampling results, showing:

1. Sample identification,

2. Sampling location,

3. The datum reported,

4. Detection limit for each datum,

5. A measure of analytical precision (e.g. uncertainty, range, variance),

6. Identification of analytical procedure, and

7. Identification of analytical laboratory.

D. A QA/QC statement on the adequacy of the analyses and decontamination demonstration.

E. The location of the file of supporting documentation:

1. Field log books,

2. Laboratory sample analysis reports,

3. The QA/QC documentation, and

4. Chain of custody records.

F. Disposal location of all regulated and nonregulated residues.

G. A certification of accuracy of the report.

TABLE E.10.1.

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ACTIVITY	MAXIMUM TIME REQUIRED
Notify NMED of the closure	-90 Days
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Internal wash down	Day 40
External wash down	Day 60
Equipment disassembly	Day 130
Floor wash down	Day 140
Final clean up	Day 160
Decontamination verification	Day 180
Submittal of final report to NMED	Day 210

NOTE:

The calendar days given above are completion dates for each activity. In some cases more than one activity may occur simultaneously.

TABLE E.10.2.

ANALYTICAL PARAMETERS

METALS	ORGANICS
Arsenic	Halogenated volatile organics
Barium	Nonhalogenated volatile organics
Cadmium	Acid-extractable semivolatile organics
Chromium	Base-neutral extractable semivolatile organics
Lead	
Mercury	
Selenium	
Silver	
Nickel	
Beryllium	

OTHER

Cyanides
Ph

NOTE:

Analytical methods are taken from *Test Methods for Evaluating Solid Waste*, EPA SW-846, and may be superseded by more current methods from SW-846 or alternate EPA-approved methods.

Metals may be analyzed for total content. Any metal whose total concentration exceeds the standard for Toxic Characteristic Leaching Procedure (TCLP) shall be analyzed using TCLP methods. Both data shall be reported in the final report.

TABLE E.10.3

SAMPLING SUMMARY

MATERIAL SAMPLED	METALS	ORGANICS	OTHER
Internal tank washwater (after)	X	X	X
External tank washwater (before)	X	X	X
External tank washwater (after)	X	X	X
Floor washwater (before)		X	
Floor washwater (after)		X	
Solid wastes & residues	X	X	X

NOTE:

Analytical parameters are given in Table E.10.2.

MASS BALANCE

STREAM NUMBER		1	2	3	4	5	6	7	8	9	10
DESCRIPTION		BARIUM SAND	GYPSUM	WATER (C)	SULFURIC ACID	PORTLAND CEMENT	AIR INLET	TOTAL PARTICULATE	TOTAL PARTICULATE	SCRUBBER WATER	SOLIDIFICATION SLURRY
MASS PER BATCH KG (A)	SOLIDS	1023	256	—	146	116 (E)	—	0.12 (D)	4×10^{-5} (F)	—	1514 (I)
	WATER	50	—	465	11	—	90 (G)	90 (G)	125 (H)	—	518 (I)
VOLUME PER BATCH LITER (A)		1000 (B)	110	465	86	36	—	—	—	—	1065 (K)
FLOW RATE		—	—	6 GPM (J)	83 GPH (J)	—	1500 ACFM	1500 ACFM	1500 ACFM	1.1 GPM	—

(A) – BATCH IS FIVE DRUMS OF BARIUM SAND.

(B) – Sp. Gr. APPROXIMATELY 3.0; BULK DENSITY APPROXIMATELY 1/3 Sp. Gr.

(C) – SUFFICIENT FOR TREATMENT & SOLIDIFICATION; NO EXTRA WATER IS ADDED FOR HEAT SINK.

(D) – FROM AP-42 EMISSION GUIDELINES.

(E) – CALCULATED TO PRODUCE 50 PSI STRENGTH.

(F) – CALCULATED FORM SCRUBBER EFFICIENCY DATA.

(G) – ASSUMES 64 GRAINS/POUND DRY AIR – 4 HOURS/BATCH.

(H) – ASSUMES 88 GRAINS/POUND DRY AIR – 4 HOURS/BATCH. (52% HUMIDIFICATION EFFICIENCY)

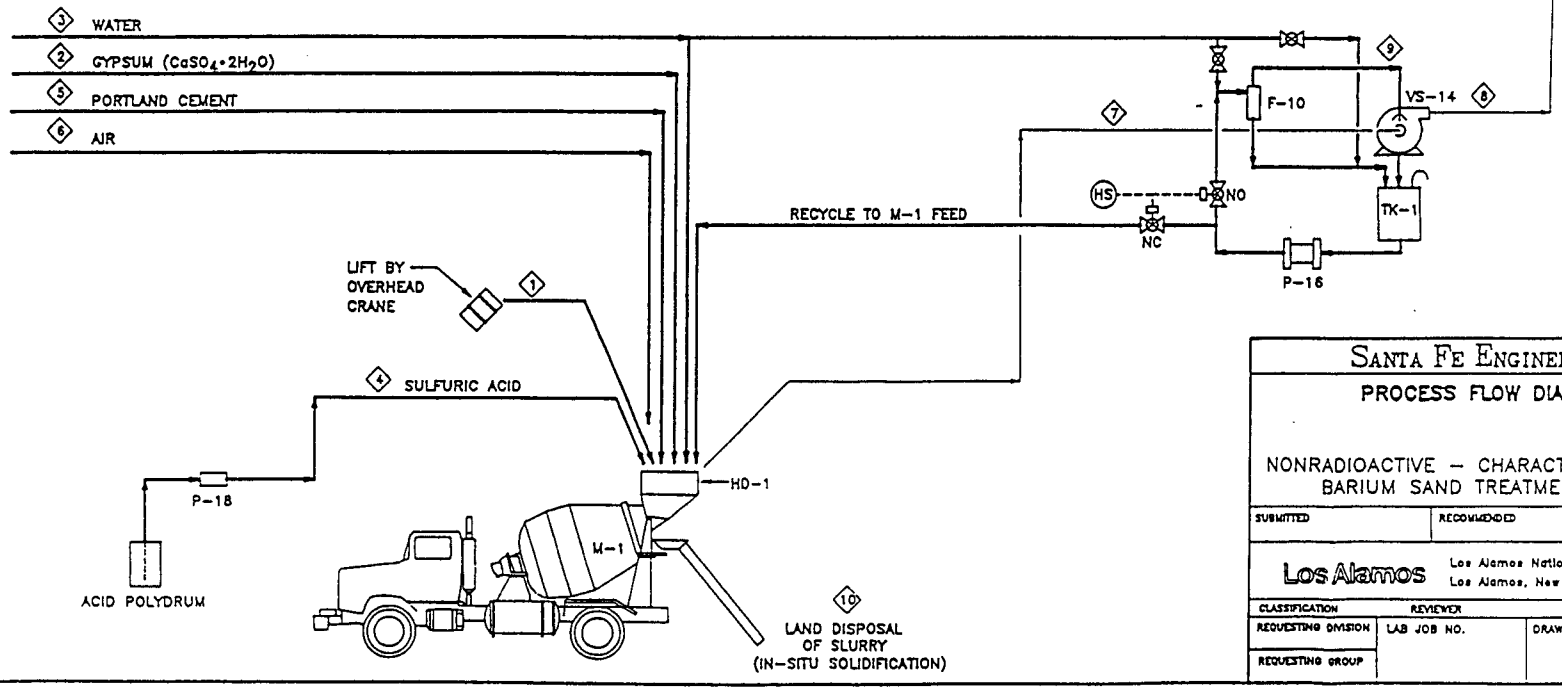
(I) – INCLUDES NET WATER INCREASE BY REACTION – 26.8 Kg. (SEE APPENDIX D)

(J) – INTERMITTENT FLOW.

(K) – ESTIMATED.

EQUIPMENT

NUMBER	NAME	SIZE	CAPACITY
F-10	BASKET STRAINER	200 MESH	304 STAINLESS STEEL
HD-1	DUST HOOD W/GRIZZLEY	2-1/2 INCH OPENINGS	316 STAINLESS STEEL
M-1	MIXER	4 YARDS	316 STAINLESS STEEL
P-16	DIAPHRAGM PUMP	1.5 GPM AT 140 FT. HEAD	316 STAINLESS STEEL
P-18	ACID METERING PUMP	3/4 HP – 83 GPH	ALLOY 20
TK-1	INDUSTRIAL WATER TANK	55 GALLONS	304 STAINLESS STEEL
VS-14	VENT SCRUBBER	7.5 HP – 1500 ACFM AT 6" SP	STAINLESS STEEL



SANTA FE ENGINEERING, LTD.

PROCESS FLOW DIAGRAM

NONRADIOACTIVE – CHARACTERISTIC BARIUM SAND TREATMENT

DRAWN	MSC
DESIGN	LBA/MSC
CHECKED	DHM
RELEASED	
DATE	3-12-92

SUBMITTED | RECOMMENDED | APPROVED

Los Alamos — Los Alamos National Laboratory, Los Alamos, New Mexico 87545

SHEET ___ OF ___

CLASSIFICATION | REVIEWER | DATE

REQUESTING DIVISION | LAB JOB NO. | DRAWING NO. 11057-KD1 | REV.

REQUESTING GROUP

FIGURE E.10-1 BARIUM SANDS TRUCK-MOUNTED CONTAINER TREATMENT SYSTEM

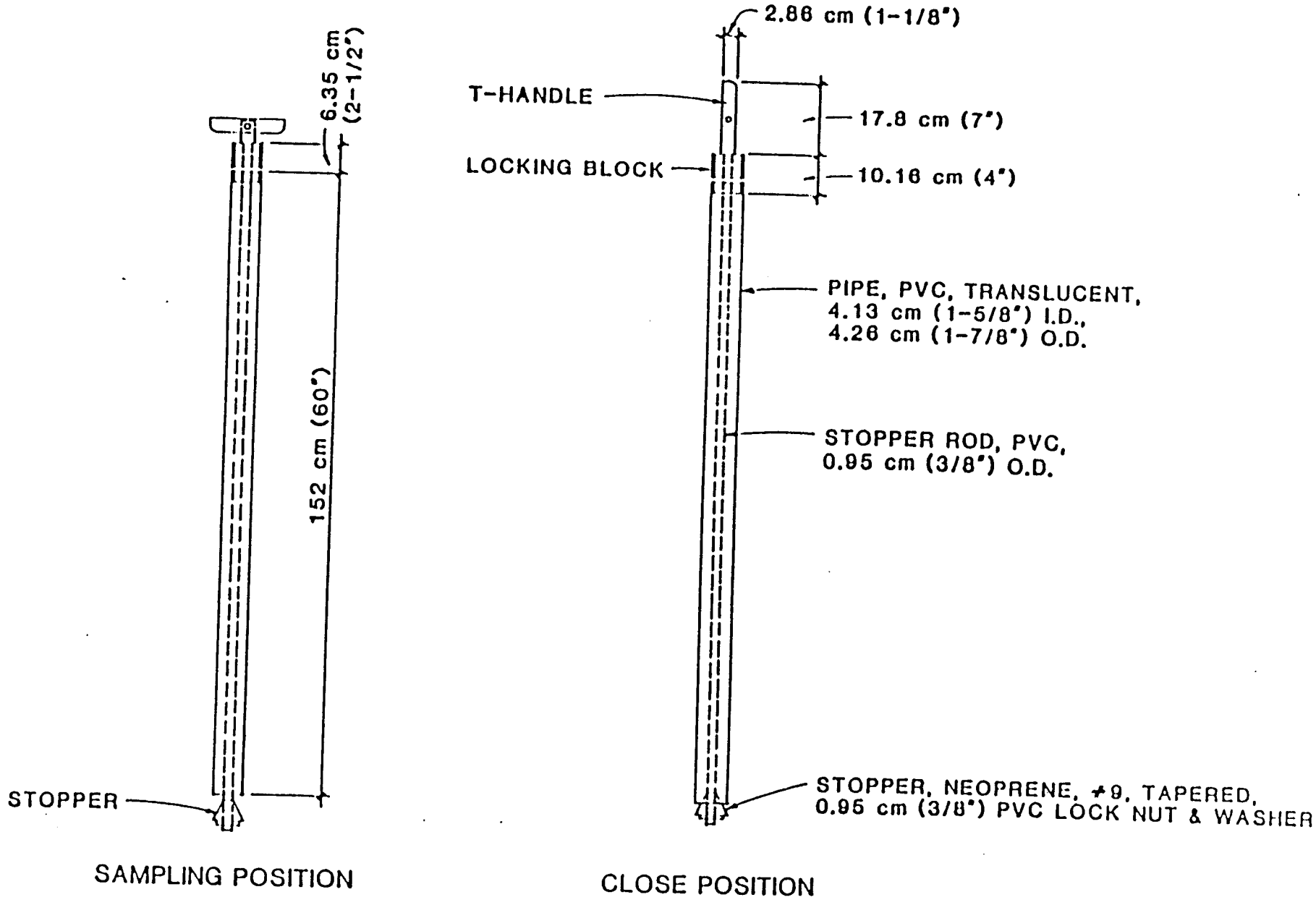


FIGURE E.10-2 COMPOSITE LIQUID WASTE SAMPLER (COLIWASA)

OFFICIAL SAMPLE SEAL

Collected by__ Collector's sample No._____
(Signature)

Date Collected_____ Time Collected_____

Place Collected_____

_____

_____

FIGURE E-10.3 EXAMPLE OF SAMPLE SEAL

OFFICIAL SAMPLE LABEL

Collector_____ Collector's Sample No._____

Place of Collection_____

_____

Date Sampled_____ Time Sampled _____

Field Information_____

FIGURE E-10.4 EXAMPLE OF SAMPLE LABEL

Hazardous Materials
Collector's Sample No.___

Location of Sampling: __Producer __Hauler
__Disposal Site
__Other: _____

_____

Company's Name _____ Telephone (___) _____

Address _____
number street city state zip

Collector's Name _____ Telephone (___) _____
signature

Date Sampled _____ Time Sampled _____ hours

Type of Process Producing Waste _____

Waste Type Code _____ Other _____

Field Information _____

_____

_____

Sample Allocation:

1. _____
name of organization

2. _____
name of organization

3. _____
name of organization

Chain of Possession:

1. _____ _____ _____
signature title inclusive dates

2. _____ _____ _____
signature title inclusive dates

3. _____ _____ _____
signature title inclusive dates

FIGURE E.10-5 CHAIN OF CUSTODY RECORD

ATTACHMENT F

CONTAINER MANAGEMENT

MODIFICATION SUMMARY:

Proposed Modification Class - 1

Class Citation - 40 CFR Appendix I to § 270.42, A.1

Summary of Changes -

The proposed modifications to the Container Management attachment include clarifications in language and updated references to container storage facilities subject to modifications proposed for Module III.

Redline/strikeout conventions are used to indicate additions and deletions from the existing text, respectively.

The majority of changes are simple clarifications in language used to describe container management procedures, or reflect changes in organizational titles or affiliations. Improved practices in hazardous waste management practices are also described in the proposed modifications.

Overall, the proposed modifications to the Container Management practices described in Attachment F will improve the efficiency and effectiveness of the Laboratory's hazardous waste management program thereby enhancing the ability of hazardous waste management personnel at the Laboratory to protect human health and the environment.

ATTACHMENT F

CONTAINER MANAGEMENT

ATTACHMENT F
CONTAINER MANAGEMENT
NM0890010515-1

F.1 Container Packaging, Sampling and Labeling

F.1.1 Container Packaging and Transport

When chemical substances are declared to be in excess, the originating group completes a Waste Profile Form (WPF, Form 1346), characterizing the waste, and submits this form to the Environmental Protection Group (EM-8) for approval. Upon approval by EM-8, the WPR is sent with a Chemical Waste Disposal Request [~~(Form H-1)~~ ~~(Form 10-3A)~~] (CWDR, Form 1541) ~~and sends the form~~ to the Waste Management Group (~~HSE-7~~ EM-7). The request lists the chemical waste the generating group needs to dispose of, the quantity and physical form of the wastes, and other pertinent information such as the condition of the containers. Material Safety Data Sheets (MSDSs) and existing analytical data may also be available. The containers described will range from two ounce bottles of unusable chemical to 330-gallon ~~Tuff-Tanks~~ transfer/transport tanks of plating material.

The Chemical Waste Disposal Request form is reviewed for adequacy of information and assignation of segregation codes, DOT information, and EPA codes. ~~It is then used by HSE-7 personnel as the shipping form when the waste is collected. HSE-7 personnel then visit the generating site to package the waste for transport to TA-54, Area L. All waste is transferred in accordance with the Laboratory's On-Site Transportation Manual.~~ The approved Chemical Waste Disposal Request form is then used by a data analyst at EM-7 to generate a database file for the waste, in addition to a Data Form, On-Site Shipping Manifest, and markings and labels for the waste container. Waste containers are marked and labeled at the generating site prior to transport to Area L and placement in the proper storage area. All shipping records are submitted to the data analyst to be permanently filed.

Small containers of waste (<5 gallon size), ~~will be overpacked~~ are packaged in either a DOT approved cardboard box or plastic or metal drum with absorbent material (referred to as labpacks). Vermiculite ~~will be~~ is the most commonly used absorbent; however, ~~the organic waste is compatible with~~ absorbents such as corncobs and sawdust~~. These absorbents may be~~ are used ~~for this category of waste since in cases of contamination of the absorbent~~ when incinerators ~~prefer to receive~~ require a more combustible material than vermiculite. Containers that will be composited at TA-54, Area L ~~will be~~ prior to off-site transport are sorted and ~~packaged~~ stored separately from those that will remain in labpacks for storage.

All wastes are manifested and transported in accordance with DOT regulations and the Detailed Operating Instructions and Standard Operating Procedures produced by EM-7. Drums and ~~Tuff-Tanks~~ transfer/transport tanks ~~will be~~ are visually inspected for integrity before transport. If the drum is unacceptable it ~~will be~~ is repackaged or overpacked prior to transport. The wastes are transported on ~~either~~ a [~~three-ton or one-ton flat bed~~ half-ton to twelve-ton truck].

Upon arrival at TA-54, Area L, the wastes are unloaded from the transport vehicle and placed in appropriate storage areas. ~~Labpack waste will be temporarily placed at the packaging building for labeling or compositing.~~ Drums and ~~Tuff-Tanks~~ transfer/transport tanks ~~will be~~ are placed on either the sampling pad or storage pad for sampling and labeling.

F.1.2 Drum Labeling, Recording, and Sampling System

Each unique package of waste, meaning labpack or drum, is ~~labeled~~ marked with the following information:

- ~~chemical group number~~ bar code;
- unique ~~record~~ container number;
- date of ~~generation~~ accumulation (if this information is not already on the container, the date from the Chemical Waste Disposal Request form is used);
- either an EPA hazardous waste ~~label~~ marking or the words "hazardous waste"; and
- DOT shipping description and DOT-required labels

~~This information and the Chemical Disposal Request Form is provided to the resident data analyst. This individual creates a second record as part of the Hazardous Waste Database. All records are then maintained by the data analyst in accordance with the requirements of this permit.~~

~~Sampling of the waste is then performed as outlined in Permit Attachment A.~~ The sampling pad is restricted to one family of chemicals at a time, for example organics. The group allowed at the time will be posted on the pad. This ensures that incompatible chemicals do not react in the containment basin of the pad. Before a new family of chemicals is placed on the pad, the containment area will be cleaned. For this reason, the main sampling pad will generally be used for organic waste and acid/base waste will be sampled at the appropriate storage cell.

After all packages are labeled and/or sampled, they are moved to one of the Laboratory's storage areas. The permitted areas are defined in Permit Module III.

F.2 Storage Area Practices

F.2.1 Specific storage areas

The Laboratory has five groups of RCRA permitted storage areas: ~~two~~ six modular storage units and the main storage pad at TA-54, Area L, the modular storage units and two storage pads at TA-50, and the storage room at the incinerator. The usage of each of these units is discussed below.

F.2.1.1 Modular storage Units, TA-54, Area L
(TA-54-68 and -69 -70, and three additional Model 22 modular units, or equivalent units)

The primary usage of the modular units ~~will be~~ is for the storage of labpack waste, particularly those in fiberboard or polyethylene containers. The modular storage units are designated for the following categories of wastes: flammables/combustibles; oxidizers/organic peroxides; acids; flammable solids; caustics; and non-regulated and other regulated materials. ~~After labeling,~~ Upon arrival at Area L, the labpacks are placed directly in the appropriate storage cell. Each modular unit has three cells allowing a maximum of six chemical family groups to be stored at any one time. However, multiple cells may be used for the same chemical family, such as two cells contain organic waste. Each cell ~~will be~~ is labeled as to the chemical family stored there. If at any time the cell designation changes, such as from organic to reactive, the cell will first be cleaned to ensure that no organic residues remain that would create an

incompatibility problem during a spill.

F.2.1.2 Storage Pad at TA-54, Area L (TA-54-32)

~~Material stored on the storage pad at TA-54, Area L, is will generally be placed there after labeling and sampling. This may not be the case for acids and bases where the storage cell is also used as the sampling pad.~~
Waste composited in 55-gallon drums and all causitic waste is placed in the appropriate cells on the storage pad upon arrival at TA-54, Area L. The pad is divided into six cells allowing the storage of six families of chemicals. However, more than one cell may be used for the same chemical type. All cells will be labeled as to which chemical type is stored there. If at any time it is necessary to change the designation of a cell, it will first be cleaned to remove any residues that might produce an unfavorable reaction with the new chemical type.

F.2.1.3 Modular Storage Units at TA-50 (TA-50-114, -137, and -138)

The modular storage units at TA-50 ~~will be~~ are used primarily to store acid and base wastes that will be treated at the Batch Waste Treatment Unit. Each cell will be labeled acid or base to indicate the type of waste stored there. If at any time the designation of a cell needs to be changed, the cell will first be cleaned to ensure that ~~incompatibility~~ incompatible residues have been removed. All waste stored here will have been labeled and sampled at TA-54, Area L.

F.2.1.4 Storage Pads at TA-50 (TA-50-139 and -140)

Two large storage pads will be located at TA-50. Each pad will have six divisions capable of storing six types of chemicals. Multiple cells may be used for the same chemical type. Each cell will be labeled to indicate the type of chemical stored there. If a cell designation needs to be changed, the cell will first be cleaned to remove any residues that might result in an incompatibility problem. All waste stored at this location will have been labeled and sampled at TA-54, Area L.

F.2.1.5 Storage Room at TA-50-37, Room 117

The storage room at TA-50-37 is divided into two areas, one for solids and one for liquids. The liquid side is further divided into two cells. Therefore, up to three chemical types may be stored at any one time. Cells will be labeled as to the chemical type stored there. If at any time the cell designation needs to be changed, the cell will be cleaned to remove any incompatible residues. Generally, only waste that is already approved for onsite incineration will be stored there. This means the waste has not only been sampled and labeled but also analyzed per Permit Attachment A. However, if the need should arise, the area will be used for compatible waste for which analytical results are pending. All labeling and sampling will have occurred at TA-54, Area L. The primary chemical type stored here will be organic waste. If small quantities of other waste types, such as oxidizers, are to be incinerated, it will generally be delivered the day of the burn to avoid storage in this room.

F.2.2 General Container Management Practices

All recyclable materials are stored as hazardous waste until such time as they are recycled.

They are placed in the same segregated storage areas as the other waste.

Any bulging drums are handled in accordance with accepted practices and Laboratory procedures. Generally this means that such practices as slowly venting the drum as it is being opened and personnel wearing protective clothing and splash guards will be followed.

Any spills resulting from the transfer/storage of waste will be cleaned up in accordance with Attachment D.

Inspection will be conducted in accordance with Attachment B.

Offsite shipments of waste ~~will~~ can occur ~~at either~~ from ~~the given storage area directly~~ generator sites, ~~or~~ from the transport pad at TA-54, Area L, or from TA-54-32, in order to ~~This will~~ avoid unnecessary transport on Pajarito Road.

Repackaging of waste will generally occur adjacent to the storage area the waste was removed from. Repackaging can range from overpacking a leaking container, to offsite contractors repackaging or compositing the labpack waste to meet incinerator specifications.

Permit Module III provides additional requirements such as required aisle space for all storage in container areas.

ATTACHMENT G

AUTHORIZED WASTE CODES

MODIFICATION SUMMARY:

Proposed Modification Class - 1

Class Citation - 40 CFR Appendix I to § 270.42, A.1 and F.4.b

Summary of Changes -

The proposed modifications to the Authorized Waste Codes attachment include addition of newly listed waste codes (D-listed TCLP wastes) and a small number of wastes not included in the original Permit Attachment G, changes in the estimated annual quantity of waste, and corrections in process codes referring to treatment process not yet included in the Permit.

Redline/strikeout conventions are used to indicate additions and deletions from the existing text, respectively.

ATTACHMENT G

AUTHORIZED WASTES

ATTACHMENT G
Authorized Wastes
NM0890010515-1

A. EPA Hazardous Waste No. (enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (enter code)	(1) Process Codes (enter)									(2) Process Description [if a code is not entered in D(1)]
D	0	0	1	100,000	P	S	0	1	T	0	3				
D	0	0	2	320,000	P	S	0	1	T	0	1				
D	0	0	3	35,000	P	S	0	1	T	0	1	T	0	4	Reacted at TA-16 (see IIIc)
D	0	0	3	5,000	P	S	0	1	T	0	1				Lithium hydride only
D	0	0	4	2,000	P	S	0	1	T	0	1				
D	0	0	5	60,000	P	S	0	1	S	0	2	T	0	1	Sand from cleanout of explosives burn pads
D	0	0	6	1,000	P	S	0	1	T	0	1				
D	0	0	7	1,500	P	S	0	1	T	0	1				
D	0	0	8	~~50,000~~ 100,000	P	S	0	1	T	0	1				May contain other metals (D004-D011)
D	0	0	9	15,000	P	S	0	1	T	0	1				
D	0	1	0	7,500	P	S	0	1	T	0	1				
D	0	1	1	7,500	P	S	0	1	T	0	1				
D	0	1	2	1,000	P	S	0	1	T	0	3				
D	0	1	3	500	P	S	0	1							
D	0	1	4	500	P	S	0	1							
D	0	1	5	500	P	S	0	1							
D	0	1	6	1,000	P	S	0	1	T	0	3				
D	0	1	7	500	P	S	0	1							
D	0	1	8	~~500~~ 15,000	P	S	0	1							
D	0	1	9	500	P	S	0	1							
D	0	2	0	500	P	S	0	1							
D	0	2	1	500	P	S	0	1							
D	0	2	2	~~500~~ 3,000	P	S	0	1							
D	0	2	3	500	P	S	0	1							
D	0	2	4	500	P	S	0	1							
D	0	2	5	500	P	S	0	1							
D	0	2	6	~~500~~ 1,000	P	S	0	1							
D	0	2	7	500	P	S	0	1							

A. EPA Hazardous Waste No. (enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (enter code)	(1) Process Codes (enter)									(2) Process Description [if a code is not entered in D(1)]
D	0	2	8	500	P	S	0	1							
D	0	2	9	500	P	S	0	1							
D	0	3	0	500	P	S	0	1							
D	0	3	1	500	P	S	0	1							
D	0	3	2	500	P	S	0	1							
D	0	3	3	500	P	S	0	1							
D	0	3	4	500	P	S	0	1							
D	0	3	5	~~500~~ 2,500	P	S	0	1							
D	0	3	6	500	P	S	0	1							
D	0	3	7	500	P	S	0	1							
D	0	3	8	500	P	S	0	1							
D	0	3	9	~~500~~ 1,000	P	S	0	1							
D	0	4	0	~~500~~ 2,500	P	S	0	1							
D	0	4	1	500	P	S	0	1							
D	0	4	2	500	P	S	0	1							
D	0	4	3	500	P	S	0	1							
				END OF D DESIGNATOR											

A. EPA Hazardous Waste No. (enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (enter code)	(1) Process Codes (enter)									(2) Process Description [if a code is not entered in D(1)]
F	0	0	1	~~10,000~~ 360,000	P	S	0	1	S	0	2	T ~~I~~	0 ~~0~~	3 ~~4~~	Solidified if treatment standards are met
F	0	0	2	75,000	P	S	0	1	S	0	2	T ~~I~~	0 ~~0~~	3 ~~4~~	
F	0	0	3	150,000	P	S	0	1	S	0	2	T ~~I~~	0 ~~0~~	3 ~~4~~	
F	0	0	4	~~500*~~ 2,000	P	S	0	1	T	0	3				
F	0	0	5	~~15,000~~ 100,000	P	S	0	1	S	0	2	T ~~I~~	0 ~~0~~	3 ~~4~~	
F	0	0	6	500*	P	S	0	1	T	0	1				
F	0	0	7	12,500	P	S	0	1	T	0	1				
F	0	0	8	1,000	P	S	0	1	T	0	1				
F	0	0	9	6,000	P	S	0	1	T	0	1				
F	0	2	7	700	P	S	0	1	T	0	3				
F	0	2	8	700	P	S	0	1	T	0	3				
				END OF F DESIGNATOR											

A. EPA Hazardous Waste No. (enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (enter code)	(1) Process Codes (enter)									(2) Process Description [if a code is not entered in D(1)]
K	0	4	4	20,000	P	S	0	1	T	O	4				
K	0	4	7	500*	P	S	0	1	T	O	4				
K	0	4	5	2,000	P	S	0	1	T	O	4				
				END OF K DESIGNATOR											

A. EPA Hazardous Waste No. (enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (enter code)	(1) Process Codes (enter)									(2) Process Description [if a code is not entered in D(1)]
P	0	0	1	1,000	P	S	0	1	T	0	3				
P	0	0	2	1,000	P	S	0	1	T	0	3				
P	0	0	3	1,000	P	S	0	1	T	0	3				
P	0	0	4	1,000	P	S	0	1	T	0	3				
P	0	0	4	1,000	P	S	0	1	T	0	3				
P	0	0	5	1,000	P	S	0	1	T	0	3				
P	0	0	6	1,000	P	S	0	1	~~T~~	~~0~~	~~4~~				
P	0	0	7	1,000	P	S	0	1	T	0	3				
P	0	0	8	1,000	P	S	0	1	T	0	3				
P	0	0	9	1,000	P	S	0	1	~~T~~	~~0~~	~~4~~				
P	0	1	0	1,000	P	S	0	1							
P	0	1	1	1,000	P	S	0	1							
P	0	1	2	1,000	P	S	0	1							
P	0	1	3	1,000	P	S	0	1	T	0	1				
P	0	1	4	1,000	P	S	0	1	T	0	3				
P	0	1	5	1,000	P	S	0	1							
P	0	1	6	1,000	P	S	0	1	T	0	3				
P	0	1	7	1,000	P	S	0	1	T	0	3				
P	0	1	8	1,000	P	S	0	1	T	0	3				
P	0	2	0	1,000	P	S	0	1	T	0	3				
P	0	2	1	1,000	P	S	0	1	T	0	1				
P	0	2	2	1,000	P	S	0	1	~~T~~	~~0~~	~~4~~				
P	0	2	3	1,000	P	S	0	1	T	0	3				
P	0	2	4	1,000	P	S	0	1	T	0	3				
P	0	2	6	1,000	P	S	0	1	T	0	3				
P	0	2	7	1,000	P	S	0	1	T	0	3				
P	0	2	8	1,000	P	S	0	1	T	0	3				
P	0	2	9	500*	P	S	0	1	T	0	1				
P	0	3	0	500*	P	S	0	1	T	0	1				
P	0	3	1	500*	P	S	0	1	T	0	3	~~T~~	~~0~~	~~4~~	
P	0	3	3	500*	P	S	0	1	T	0	3	~~T~~	~~0~~	~~4~~	
P	0	3	4	500*	P	S	0	1	T	0	3				

A. EPA Hazardous Waste No. (enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (enter code)	(1) Process Codes (enter)									(2) Process Description [if a code is not entered in D(1)]
P	0	3	6	500*	P	S	0	1	T	0	3				
P	0	3	7	500*	P	S	0	1	T	0	3				
P	0	3	8	500*	P	S	0	1	T	0	3				
P	0	3	9	500*	P	S	0	1	T	0	3				
P	0	4	0	500*	P	S	0	1	T	0	3				
P	0	4	1	500*	P	S	0	1	T	0	3				
P	0	4	2	500*	P	S	0	1	T	0	3				
P	0	4	3	500*	P	S	0	1	T	0	3				
P	0	4	4	500*	P	S	0	1	T	0	3				
P	0	4	5	500*	P	S	0	1	T	0	3				
P	0	4	6	500*	P	S	0	1	T	0	3				
P	0	4	7	500*	P	S	0	1	T	0	3				
P	0	4	8	500*	P	S	0	1	T	0	3				
P	0	4	9	500*	P	S	0	1	T	0	3				
P	0	5	0	500*	P	S	0	1	T	0	3				
P	0	5	1	500*	P	S	0	1	T	0	3				
P	0	5	4	500*	P	S	0	1	T	0	1	T ~~T~~	0 ~~0~~	3 ~~4~~	
P	0	5	6	6,000	P	S	0	1							
P	0	5	7	500*	P	S	0	1	T	0	3				
P	0	5	8	500*	P	S	0	1							
P	0	5	9	500*	P	S	0	1	T	0	3				
P	0	6	0	500*	P	S	0	1	T	0	3				
P	0	6	2	500*	P	S	0	1	T	0	3				
P	0	6	3	500*	P	S	0	1	T	0	3	~~T~~	~~0~~	~~4~~	
P	0	6	4	500*	P	S	0	1	T	0	3	~~T~~	~~0~~	~~4~~	
P	0	6	5	500*	P	S	0	1	~~T~~	~~0~~	4				
P	0	6	6	500*	P	S	0	1	T	0	3				
P	0	6	7	500*	P	S	0	1	T	0	3				
P	0	6	8	500*	P	S	0	1	T	0	3				
P	0	6	9	500*	P	S	0	1	T	0	3	~~T~~	~~0~~	~~4~~	
P	0	7	0	500*	P	S	0	1	T	0	3				

A. EPA Hazardous Waste No. (enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (enter code)	(1) Process Codes (enter)									(2) Process Description [if a code is not entered in D(1)]
P	0	7	1	500*	P	S	0	1	T	0	3	T	0	4	
P	0	7	2	500*	P	S	0	1	T	0	3				
P	0	7	3	500*	P	S	0	1	T	0	1	T	0	4	
P	0	7	4	500*	P	S	0	1	T	0	1				
P	0	7	5	500*	P	S	0	1	T	0	3				
P	0	7	6	500*	P	S	0	1	T	0	1	T	0	4	
P	0	7	7	500*	P	S	0	1	T	0	3	T	0	4	
P	0	7	8	500*	P	S	0	1	T	0	1				
P	0	8	1	500*	P	S	0	1	T	0	4				
P	0	8	2	500*	P	S	0	1	T	0	3				
P	0	8	4	500*	P	S	0	1	T	0	3				
P	0	8	5	500*	P	S	0	1	T	0	3				
P	0	8	7	500*	P	S	0	1							
P	0	8	8	500*	P	S	0	1	T	0	3				
P	0	8	9	500*	P	S	0	1	T	0	3				
P	0	9	2	500*	P	S	0	1	T	0	3				
P	0	9	3	500*	P	S	0	1	T	0	3				
P	0	9	4	500*	P	S	0	1	T	0	3				
P	0	9	5	500*	P	S	0	1	T	0	3				
P	0	9	6	500*	P	S	0	1	T	0	3	T	0	4	
P	0	9	7	500*	P	S	0	1	T	0	3				
P	0	9	8	500*	P	S	0	1	T	0	1				
P	0	9	9	500*	P	S	0	1	T	0	1				
P	1	0	1	500*	P	S	0	1	T	0	3				
P	1	0	2	500*	P	S	0	1	T	0	3				
P	1	0	3	500*	P	S	0	1	T	0	3				
P	1	0	4	500*	P	S	0	1	T	0	1				
P	1	0	5	500*	P	S	0	1							
P	1	0	6	500*	P	S	0	1	T	0	1				
P	1	0	7	500*	P	S	0	1	T	0	4				
P	1	0	8	500*	P	S	0	1	T	0	3				
P	1	0	9	500*	P	S	0	1	T	0	3				

A. EPA Hazardous Waste No. (enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (enter code)	(1) Process Codes (enter)									(2) Process Description [if a code is not entered in D(1)]
P	1	1	0	500*	P	S	0	1	T	0	3				
P	1	1	1	500*	P	S	0	1	T	0	3				
P	1	1	2	500*	P	S	0	1	T	0	3	~~T~~	~~0~~	~~4~~	
P	1	1	3	500*	P	S	0	1	T	0	1				
P	1	1	4	500*	P	S	0	1	T	0	1				
P	1	1	5	500*	P	S	0	1	T	0	1				
P	1	1	6	500*	P	S	0	1	T	0	3				
P	1	1	8	500*	P	S	0	1	T	0	3				
P	1	1	9	500*	P	S	0	1							
P	1	2	0	500*	P	S	0	1							
P	1	2	1	1,000	P	S	0	1	T	0	1				
P	1	2	2	1,000	P	S	0	1	~~T~~	~~0~~	~~4~~				
P	1	2	3	1,000	P	S	0	1	T	0	3				
				END OF P DESIGNATOR											

A. EPA Hazardous Waste No. (enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (enter code)	(1) Process Codes (enter)									(2) Process Description [if a code is not entered in D(1)]
U	0	0	1	500*	P	S	0	1	T	0	3				
U	0	0	2	1,000	P	S	0	1	T	0	3				
U	0	0	3	500*	P	S	0	1	T	0	3				
U	0	0	4	500*	P	S	0	1	T	0	3				
U	0	0	5	500*	P	S	0	1	T	0	3				
U	0	0	6	500*	P	S	0	1	T	0	3	~~T~~	~~0~~	~~4~~	
U	0	0	7	500*	P	S	0	1	T	0	3				
U	0	0	8	500*	P	S	0	1	T	0	3	~~T~~	~~0~~	~~4~~	
U	0	0	9	500*	P	S	0	1	T	0	3				
U	0	1	0	500*	P	S	0	1	T	0	3				
U	0	1	1	500*	P	S	0	1	T	0	3				
U	0	1	2	500*	P	S	0	1	T	0	3				
U	0	1	4	500*	P	S	0	1	T	0	3				
U	0	1	5	500*	P	S	0	1	T	0	3				
U	0	1	6	500*	P	S	0	1	T	0	3				
U	0	1	7	500*	P	S	0	1	T	0	3				
U	0	1	8	500*	P	S	0	1	T	0	3				
U	0	1	9	1,000	P	S	0	1	T	0	3				
U	0	2	0	500*	P	S	0	1	T	0	3	~~T~~	~~0~~	~~4~~	
U	0	2	1	500*	P	S	0	1	T	0	3				
U	0	2	2	500*	P	S	0	1	T	0	3				
U	0	2	3	500*	P	S	0	1	T	0	3	~~T~~	~~0~~	~~4~~	
U	0	2	4	500*	P	S	0	1	T	0	3				
U	0	2	5	500*	P	S	0	1	T	0	3				
U	0	2	6	500*	P	S	0	1	T	0	3				
U	0	2	7	500*	P	S	0	1	T	0	3				
U	0	2	8	1,000	P	S	0	1	T	0	3				
U	0	2	9	1,000	P	S	0	1	T	0	3				
U	0	3	0	1,000	P	S	0	1	T	0	3				
U	0	3	1	1,000	P	S	0	1	T	0	3				
U	0	3	2	1,000	P	S	0	1	T	0	1				
U	0	3	3	1,000	P	S	0	1	~~T~~	~~0~~	~~4~~				

A. EPA Hazardous Waste No. (enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (enter code)	(1) Process Codes (enter)									(2) Process Description [if a code is not entered in D(1)]
U	0	3	4	1,000	P	S	0	1	T	0	3				
U	0	3	5	1,000	P	S	0	1	T	0	3				
U	0	3	6	1,000	P	S	0	1	T	0	3				
U	0	3	7	1,000	P	S	0	1	T	0	3				
U	0	3	8	1,000	P	S	0	1	T	0	3				
U	0	3	9	1,000	P	S	0	1	T	0	3				
U	0	4	1	1,000	P	S	0	1	T	0	3				
U	0	4	2	1,000	P	S	0	1	T	0	3	~~T~~	~~0~~	~~4~~	
U	0	4	3	1,000	P	S	0	1	T	0	3	~~T~~	~~0~~	~~4~~	
U	0	4	4	1,000	P	S	0	1	T	0	3				
U	0	4	5	1,000	P	S	0	1	T	0	3	~~T~~	~~0~~	~~4~~	
U	0	4	6	1,000	P	S	0	1	T	0	3				
U	0	4	7	1,000	P	S	0	1	T	0	3				
U	0	4	8	1,000	P	S	0	1	T	0	3				
U	0	4	9	1,000	P	S	0	1	T	0	3				
U	0	5	0	1,000	P	S	0	1	T	0	3				
U	0	5	1	1,000	P	S	0	1	T	0	3				
U	0	5	2	1,000	P	S	0	1	T	0	3				
U	0	5	3	1,000	P	S	0	1	T	0	3				
U	0	5	5	1,000	P	S	0	1	T	0	3				
U	0	5	6	500*	P	S	0	1	T	0	3				
U	0	5	7	500*	P	S	0	1	T	0	3				
U	0	5	8	500*	P	S	0	1	T	0	3				
U	0	5	9	500*	P	S	0	1	T	0	3				
U	0	6	0	500*	P	S	0	1	T	0	3				
U	0	6	1	500*	P	S	0	1	T	0	3				
U	0	6	2	500*	P	S	0	1	T	0	3				
U	0	6	3	500*	P	S	0	1	T	0	3				
U	0	6	4	500*	P	S	0	1	T	0	3				
U	0	6	6	500*	P	S	0	1	T	0	3				
U	0	6	7	500*	P	S	0	1	T	0	3				
U	0	6	8	500*	P	S	0	1	T	0	3				

A. EPA Hazardous Waste No. (enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (enter code)	(1) Process Codes (enter)									(2) Process Description [if a code is not entered in D(1)]
U	0	6	9	500*	P	S	0	1	T	0	3				
U	0	7	0	500*	P	S	0	1	T	0	3				
U	0	7	1	500*	P	S	0	1	T	0	3				
U	0	7	2	500*	P	S	0	1	T	0	3				
U	0	7	3	500*	P	S	0	1	T	0	3				
U	0	7	4	500*	P	S	0	1	T	0	3				
U	0	7	5	500*	P	S	0	1							
U	0	7	6	500*	P	S	0	1	T	0	3				
U	0	7	7	500*	P	S	0	1	T	0	3				
U	0	7	8	500*	P	S	0	1	T	0	3				
U	0	7	9	500*	P	S	0	1	T	0	3				
U	0	8	0	1,000	P	S	0	1	T	0	3				
U	0	8	1	500*	P	S	0	1	T	0	3				
U	0	8	2	500*	P	S	0	1	T	0	3				
U	0	8	3	500*	P	S	0	1	T	0	3				
U	0	8	4	500*	P	S	0	1	T	0	3				
U	0	8	5	500*	P	S	0	1	T	0	3				
U	0	8	6	500*	P	S	0	1	T	0	3				
U	0	8	7	500*	P	S	0	1	T	0	3				
U	0	8	8	500*	P	S	0	1	T	0	3				
U	0	8	9	500*	P	S	0	1	T	0	3				
U	0	9	0	500*	P	S	0	1	T	0	3				
U	0	9	1	500*	P	S	0	1	T	0	3				
U	0	9	2	500*	P	S	0	1	T	0	3	~~T~~	~~0~~	~~4~~	
U	0	9	3	500*	P	S	0	1	T	0	3				
U	0	9	4	500*	P	S	0	1	T	0	3				
U	0	9	5	500*	P	S	0	1	T	0	3				
U	0	9	6	500*	P	S	0	1	T	0	3				
U	0	9	7	500*	P	S	0	1	T	0	3				
U	0	9	8	500*	P	S	0	1	T	0	3				
U	0	9	9	500*	P	S	0	1	T	0	3				
U	1	0	1	500*	P	S	0	1	T	0	3				

A. EPA Hazardous Waste No. (enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (enter code)	(1) Process Codes (enter)									(2) Process Description [if a code is not entered in D(1)]
U	1	0	2	500*	P	S	0	1	T	0	3				
U	1	0	3	500*	P	S	0	1	T	0	3				
U	1	0	5	500*	P	S	0	1	T	0	3				
U	1	0	6	500*	P	S	0	1	T	0	3				
U	1	0	7	500*	P	S	0	1	T	0	3				
U	1	0	8	500*	P	S	0	1	T	0	3				
U	1	0	9	500*	P	S	0	1	T	0	3				
U	1	1	0	500*	P	S	0	1	T	0	3				
U	1	1	1	500*	P	S	0	1	T	0	3				
U	1	1	2	500*	P	S	0	1	T	0	3	T	0	4	
U	1	1	3	500*	P	S	0	1	T	0	3	T	0	4	
U	1	1	4	500*	P	S	0	1	T	0	3				
U	1	1	5	500*	P	S	0	1	T	0	3	T	0	4	
U	1	1	6	500*	P	S	0	1	T	0	3				
U	1	1	7	500*	P	S	0	1	T	0	3	T	0	4	
U	1	1	8	500*	P	S	0	1	T	0	3	T	0	4	
U	1	1	9	500	P	S	0	1	T	0	3				
U	1	2	0	500*	P	S	0	1	T	0	3				
U	1	2	1	500*	P	S	0	1							
U	1	2	2	1,000	P	S	0	1	T	0	3				
U	1	2	3	500*	P	S	0	1	T	0	3				
U	1	2	4	500*	P	S	0	1	T	0	3				
U	1	2	5	500*	P	S	0	1	T	0	3				
U	1	2	6	500*	P	S	0	1	T	0	3				
U	1	2	7	500*	P	S	0	1	T	0	3				
U	1	2	8	500*	P	S	0	1	T	0	3				
U	1	2	9	500*	P	S	0	1	T	0	3				
U	1	3	0	500*	P	S	0	1	T	0	3				
U	1	3	1	500*	P	S	0	1	T	0	3				
U	1	3	2	500*	P	S	0	1	T	0	3				
U	1	3	3	500*	P	S	0	1	T	0	3	T	0	4	
U	1	3	4	10,000	P	S	0	1	T	0	1				

A. EPA Hazardous Waste No. (enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (enter code)	(1) Process Codes (enter)									(2) Process Description [if a code is not entered in D(1)]
U	1	3	5	500*	P	S	0	1	T	0	3	~~T~~ T	~~0~~ 0	4 1	
U	1	3	6	500*	P	S	0	1	T	0	3				
U	1	3	7	1,000	P	S	0	1	T	0	3				
U	1	3	8	1,000	P	S	0	1	T	0	3				
U	1	3	9	1,000	P	S	0	1	T	0	3				
U	1	4	0	1,000	P	S	0	1	T	0	3				
U	1	4	1	1,000	P	S	0	1	T	0	3				
U	1	4	2	1,000	P	S	0	1	T	0	3				
U	1	4	3	1,000	P	S	0	1	T	0	3				
U	1	4	4	1,000	P	S	0	1							
U	1	4	5	1,000	P	S	0	1							
U	1	4	6	1,000	P	S	0	1							
U	1	4	7	1,000	P	S	0	1	T	0	3				
U	1	4	8	1,000	P	S	0	1	T	0	3				
U	1	4	9	1,000	P	S	0	1	T	0	3				
U	1	5	0	1,000	P	S	0	1	T	0	3				
U	1	5	1	1,000	P	S	0	1							
U	1	5	2	1,000	P	S	0	1	T	0	3				
U	1	5	3	1,000	P	S	0	1	T	0	3				
U	1	5	4	1,000	P	S	0	1	T	0	3				
U	1	5	5	1,000	P	S	0	1	T	0	3				
U	1	5	6	1,000	P	S	0	1	T	0	3				
U	1	5	7	1,000	P	S	0	1	T	0	3				
U	1	5	8	1,000	P	S	0	1	T	0	3				
U	1	5	9	1,000	P	S	0	1	T	0	3				
U	1	6	0	1,000	P	S	0	1	T	0	3	~~T~~	~~0~~	~~4~~	
U	1	6	1	1,000	P	S	0	1	T	0	3				
U	1	6	2	1,000	P	S	0	1	T	0	3				
U	1	6	3	500*	P	S	0	1	T	0	3				
U	1	6	4	500*	P	S	0	1	T	0	3				
U	1	6	5	500*	P	S	0	1	T	0	3				
U	1	6	6	500*	P	S	0	1	T	0	3				

A. EPA Hazardous Waste No. (enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (enter code)	(1) Process Codes (enter)									(2) Process Description [if a code is not entered in D(1)]
U	1	6	7	500*	P	S	0	1	T	0	3				
U	1	6	8	500*	P	S	0	1	T	0	3				
U	1	6	9	500*	P	S	0	1	T	0	3				
U	1	7	0	500*	P	S	0	1	T	0	3				
U	1	7	1	500*	P	S	0	1	T	0	3				
U	1	7	2	500*	P	S	0	1	T	0	3				
U	1	7	3	500*	P	S	0	1	T	0	3				
U	1	7	4	500*	P	S	0	1	T	0	3				
U	1	7	6	500*	P	S	0	1	T	0	3				
U	1	7	7	500*	P	S	0	1	T	0	3				
U	1	7	8	500*	P	S	0	1	T	0	3				
U	1	7	9	500*	P	S	0	1	T	0	3				
U	1	8	0	500*	P	S	0	1	T	0	3				
U	1	8	1	500*	P	S	0	1	T	0	3				
U	1	8	2	500*	P	S	0	1	T	0	3				
U	1	8	3	500*	P	S	0	1	T	0	3				
U	1	8	4	500*	P	S	0	1	T	0	3				
U	1	8	5	500*	P	S	0	1	T	0	3				
U	1	8	6	500*	P	S	0	1	T	0	3				
U	1	8	7	500*	P	S	0	1	T	0	3				
U	1	8	8	1,000	P	S	0	1	T	0	3				
U	1	8	9	500*	P	S	0	1	T	0	3	~~T~~	~~0~~	~~4~~	
U	1	9	0	500*	P	S	0	1	T	0	3				
U	1	9	1	500*	P	S	0	1	T	0	3				
U	1	9	2	500*	P	S	0	1	T	0	3				
U	1	9	3	500*	P	S	0	1	T	0	3				
U	1	9	4	500*	P	S	0	1	T	0	3				
U	1	9	6	500*	P	S	0	1	T	0	3				
U	1	9	7	500*	P	S	0	1	T	0	3				
U	2	0	0	500*	P	S	0	1	T	0	3				
U	2	0	1	500*	P	S	0	1	T	0	3				
U	2	0	2	500*	P	S	0	1	T	0	3				

A. EPA Hazardous Waste No. (enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (enter code)	(1) Process Codes (enter)									(2) Process Description [if a code is not entered in D(1)]
U	2	0	3	500*	P	S	0	1	T	0	3				
U	2	0	4	500*	P	S	0	1							
U	2	0	5	500*	P	S	0	1	~~T~~	~~0~~	~~4~~				
U	2	0	6	500*	P	S	0	1	T	0	3				
U	2	0	7	500*	P	S	0	1	T	0	3				
U	2	0	8	500*	P	S	0	1	T	0	3				
U	2	0	9	500*	P	S	0	1	T	0	3				
U	2	1	0	500*	P	S	0	1	T	0	3				
U	2	1	1	1,000	P	S	0	1	T	0	3				
U	2	1	2	500*	P	S	0	1	T	0	3				
U	2	1	3	500*	P	S	0	1	T	0	3	~~T~~	~~0~~	~~4~~	
U	2	1	4	500*	P	S	0	1	T	0	3				
U	2	1	5	500*	P	S	0	1							
U	2	1	6	500*	P	S	0	1							
U	2	1	7	500*	P	S	0	1	~~T~~	~~0~~	~~4~~				
U	2	1	8	500*	P	S	0	1	T	0	3				
U	2	1	9	500*	P	S	0	1	T	0	3				
U	2	2	0	1,000	P	S	0	1	T	0	3				
U	2	2	1	500*	P	S	0	1	T	0	3				
U	2	2	2	500*	P	S	0	1	T	0	3				
U	2	2	3	1,000	P	S	0	1	T	0	3				
U	2	2	5	500*	P	S	0	1							
U	2	2	6	1,500 ~~10,000~~	P	S	0	1	T	0	3				
U	2	2	7	500*	P	S	0	1	T	0	3				
U	2	2	8	2,000	P	S	0	1	T	0	3				
U	2	3	0	500*	P	S	0	1	T	0	3				
U	2	3	1	500*	P	S	0	1	T	0	3				
U	2	3	2	500*	P	S	0	1	T	0	3				
U	2	3	3	500*	P	S	0	1	T	0	3				
U	2	3	4	500*	P	S	0	1	T	0	3	~~T~~	~~0~~	~~4~~	
U	2	3	5	500*	P	S	0	1	T	0	3				
U	2	3	6	500*	P	S	0	1	T	0	3				

A. EPA Hazardous Waste No. (enter code)				B. Estimated Annual Quantity of Waste	C. Unit of Measure (enter code)	(1) Process Codes (enter)									(2) Process Description [if a code is not entered in D(1)]
U	2	3	7	500*	P	S	0	1	T	0	3				
U	2	3	8	500*	P	S	0	1	T	0	3				
U	2	3	9	1,000	P	S	0	1	T	0	3				
U	2	4	0	500*	P	S	0	1	T	0	3				
U	2	4	2	500*	P	S	0	1	T	0	3				
U	2	4	3	500*	P	S	0	1	T	0	3				
U	2	4	4	500*	P	S	0	1	T	0	3				
U	2	4	6	500*	P	S	0	1							
U	2	4	7	500*	P	S	0	1	T	0	3				
U	2	4	8	500*	P	S	0	1	T	0	3				
U	2	4	9	500*	P	S	0	1							
U	3	2	6	500*	P	S	0	1	T	0	3				
U	3	5	3	500*	P	S	0	1	T	0	3				
U	3	5	9	500*	P	S	0	1	T	0	3				
				END OF U DESIGNATOR											

ATTACHMENT L

BARIUM SANDS
TRUCK-MOUNTED-CONTAINER
TREATMENT SYSTEM

MODIFICATION SUMMARY:

Proposed Modification Class - 1

Class Citation - 40 CFR Appendix I to § 270.42, A.1

Summary of Changes -

This is a proposed new attachment to the Permit describing the operational specifications for the proposed Barium Sands Truck-Mounted-Container Treatment System identified in Module IV of the proposed permit modifications.

ATTACHMENT L

BARIUM SANDS
TRUCK-MOUNTED-CONTAINER
TREATMENT SYSTEM

ATTACHMENT L
BARIUM SANDS TRUCK-MOUNTED-CONTAINER TREATMENT SYSTEM OPERATIONS

INTRODUCTION

The Barium Sands Truck-Mounted-Container Treatment System will be located at TA-54, Area L, on the treatment pad in TA 54-35. This treatment system will replace two of the existing tanks used for treating barium contaminated sands. The treatment process involves the use of sulfuric acid and gypsum to precipitate barium sulfate from barium contaminated sands. The treated sands have barium concentrations below TCLP limits in accordance with HWMR-7, as amended 1992, 40 CFR § 261.24, and meet treatment standards identified at HWMR-7, 40 CFR § 268.43.

DESCRIPTION

TA 54-35 at TA-54, Area L, currently contains four shallow treatment tanks designated for the treatment of barium-contaminated sands generated through the treatment of high-explosive contaminated materials. The barium-contaminated sands are treated by mixing sulfuric acid and gypsum with the wastes in proper proportions to result in chemical precipitation of the barium as barium sulfate, which is non-hazardous and non-regulated. The mixing process is carried out manually. Upon completion of the treatment, the resulting mixture is incorporated into a cement matrix and is disposed of at TA-54, Area J in 55-gallon drums.

The Truck-Mounted-Container Treatment System will improve the efficiency of this treatment process by minimizing handling of the barium contaminated sands and reducing the time necessary to achieve chemical precipitation of the barium sulfate. Conducting the treatment in a Truck-Mounted-Container Treatment System will also improve solidification efficiency and homogeneity of the cemented mixture.

HEALTH, SAFETY, AND ENVIRONMENTAL CONCERNS

The Barium Sands Truck-Mounted-Container Treatment System presents hazards to workers through the use of sulfuric acid (corrosive) to precipitate barium (toxic) from contaminated sand. Gypsum is also used, but does not pose a direct threat to human health or environment. Fugitive dust from the operation is a health concern that is minimized or eliminated through the use of a vent scrubber and dust hood. Other concerns involve potential hazards associated with the use of heavy equipment to maneuver the 55-gallon drums of barium contaminated sands into place and the use of the truck-mounted-container treatment system.

PROCEDURES FOR SAFE OPERATION

The technical operational specifications of the Truck-Mounted-Container Treatment System are illustrated in Figure L-1. Safe and effective operation of this unit will involve transport of the barium-contaminated sands from point of generation to TA 54-35, Area L, introduction of the barium sands and reagents into the container treatment system, effective mixing of the

sand/reagent slurry, sampling the resultant mixture to determine the effectiveness of the treatment, addition of cement to the final non-hazardous mixture, for solidification in a container, and cleaning of the container-treatment system in preparation for future use. The operations necessary to address these requirements will be conducted in accordance with the example checklist, or its equivalent, provided as Figure L-2.

The following summarizes the conduct of operations for the Barium Sands Truck-Mounted-Container Treatment System. Component references refer to Figure L.1. The order of operations corresponds to items on the checklist provided as Figure L.2.

A. Barium-contaminated sands will be transported to TA 54-35, Area L, in 55-gallon drums in accordance with DOT regulations, Laboratory policies, and this permit. Contents of each drum will be determined prior to transport, establishing the need for treatment.

B. At the TA 54-35 treatment pad, the vent scrubber water tank (TK-1) will be filled before treatment operations commence.

C. The vent scrubber water tank volume and water flow totalizer readings are noted. With the container-treatment truck located on the TA 54-35 treatment pad, one-half of the estimated total water required for the treatment process is injected into the treatment container (M-1).

D. The dust hood (HD-1) is attached to the treatment container hopper and the vent scrubber (VS-14) is turned on. This ensures that fugitive dust is captured and recycled to the process container (M-1).

E. Five drums, or remaining drums if less than five, are sequentially lifted and emptied into the process container (M-1). The grizzley (screen) in the opening of the hopper will capture debris larger than 2.5 inches in diameter for disposal as scrap.

F. The truck engine is then started to power the process container (M-1), which rotates and mixes the barium-contaminated sand and water slurry.

G. After the contents of the process container (M-1) are thoroughly mixed, the vent scrubber (VS-14) is turned off and the vent hood (HD-1) detached from the process container (M-1) for sample collection.

H. Samples of the barium-contaminated sand slurry are collected by reversing the rotation of the process container (M-1). These samples are analyzed for barium to determine the quantity of sulfuric acid and gypsum required to precipitate the barium as barium sulfate.

I. The dust hood is then recoupled to the hopper (HD-1) and the vent scrubber (VS-14) restarted. Based upon sample results, the required volume of crushed gypsum and remaining quantity of water are added to the process container (M-1) and mixing by rotation is continued.

J. With the process container (M-1) rotating, the dust hood (HD-1) in place, and the vent scrubber (VS-14) in operation, a predetermined volume of sulfuric acid is introduced to the process container (M-1).

K. Mixing in the process container (M-1) continues for a predetermined period of time before a sample is collected, as described in step H above. The barium-contaminated slurry is retained in the process container until the results of these analyses are complete.

L. If the barium is not completely reacted to below treatment standards (100 mg/l), steps H through K are repeated.

M. Upon attainment of treatment standards, a predetermined volume of cement is added in proper proportions to the amount of water added to the process container and mixing continues to achieve a homogeneous mixture.

N. At the end of each treatment cycle, the Truck-Mounted-Container Treatment System is then triple-rinsed. Rinse water from each rinsing is collected separately in drums and sampled for barium before disposal or treatment. If no barium is found in rinse water samples, or if the concentrations are below treatment standards (100 mg/l), the rinse water will be disposed of as non-hazardous waste. If concentrations of barium in the rinse water exceed treatment standards, the barium contaminated rinse water will be stored in drums until the next use of the container-treatment system, when it will be recycled through the container treatment system as process water. In the event that the third rinse contains barium above treatment standards, rinsing of the equipment will continue until a clean rinse is obtained.

TRAINING

All personnel involved in the operation of the Truck-Mounted-Container Treatment System will receive training in accordance with Permit Attachment C.

EMERGENCY PROCEDURES

Emergency procedures for operation of the Truck-Mounted-Container Treatment System are covered under Permit Attachment D. In addition, site specific training will be given in accordance with Permit Attachment C.

3.1.1

MASS BALANCE

STREAM NUMBER		1	2	3	4	5	6	7	8	9	10
DESCRIPTION		BARIUM SAND	GYPSUM	WATER (C)	SULFURIC ACID	PORTLAND CEMENT	AIR INLET	TOTAL PARTICULATE	TOTAL PARTICULATE	SCRUBBER WATER	SOLIDIFICATION SLURRY
MASS PER BATCH KG (A)	SOLIDS	1023	256	—	146	116 (E)	—	0.12 (D)	4×10^{-5} (F)	—	1514 (I)
	WATER	50	—	465	11	—	90 (G)	90 (G)	125 (H)	—	518 (I)
VOLUME PER BATCH LITER (A)		1000 (B)	110	465	86	36	—	—	—	—	1065 (K)
FLOW RATE		—	—	6 GPM (J)	83 GPH (J)	—	1500 ACFM	1500 ACFM	1500 ACFM	1.1 GPM	—

(A) – BATCH IS FIVE DRUMS OF BARIUM SAND.

(B) – Sp. Gr. APPROXIMATELY 3.0; BULK DENSITY APPROXIMATELY 1/3 Sp. Gr.

(C) – SUFFICIENT FOR TREATMENT & SOLIDIFICATION; NO EXTRA WATER IS ADDED FOR HEAT SINK.

(D) – FROM AP-42 EMISSION GUIDELINES.

(E) – CALCULATED TO PRODUCE 50 PSI STRENGTH.

(F) – CALCULATED FORM SCRUBBER EFFICIENCY DATA.

(G) – ASSUMES 64 GRAINS/POUND DRY AIR – 4 HOURS/BATCH.

(H) – ASSUMES 88 GRAINS/POUND DRY AIR – 4 HOURS/BATCH. (52% HUMIDIFICATION EFFICIENCY)

(I) – INCLUDES NET WATER INCREASE BY REACTION – 26.8 Kg. (SEE APPENDIX D)

(J) – INTERMITTENT FLOW.

(K) – ESTIMATED.

EQUIPMENT

NUMBER	NAME	SIZE	CAPACITY
F-10	BASKET STRAINER	200 MESH	304 STAINLESS STEEL
HD-1	DUST HOOD W/GRIZZLEY	2-1/2 INCH OPENINGS	316 STAINLESS STEEL
M-1	MIXER	4 YARDS	316 STAINLESS STEEL
P-16	DIAPHRAGM PUMP	1.5 GPM AT 140 FT. HEAD	316 STAINLESS STEEL
P-18	ACID METERING PUMP	3/4 HP – 83 GPH	ALLOY 20
TK-1	INDUSTRIAL WATER TANK	55 GALLONS	304 STAINLESS STEEL
VS-14	VENT SCRUBBER	7.5 HP – 1500 ACFM AT 6" SP	STAINLESS STEEL

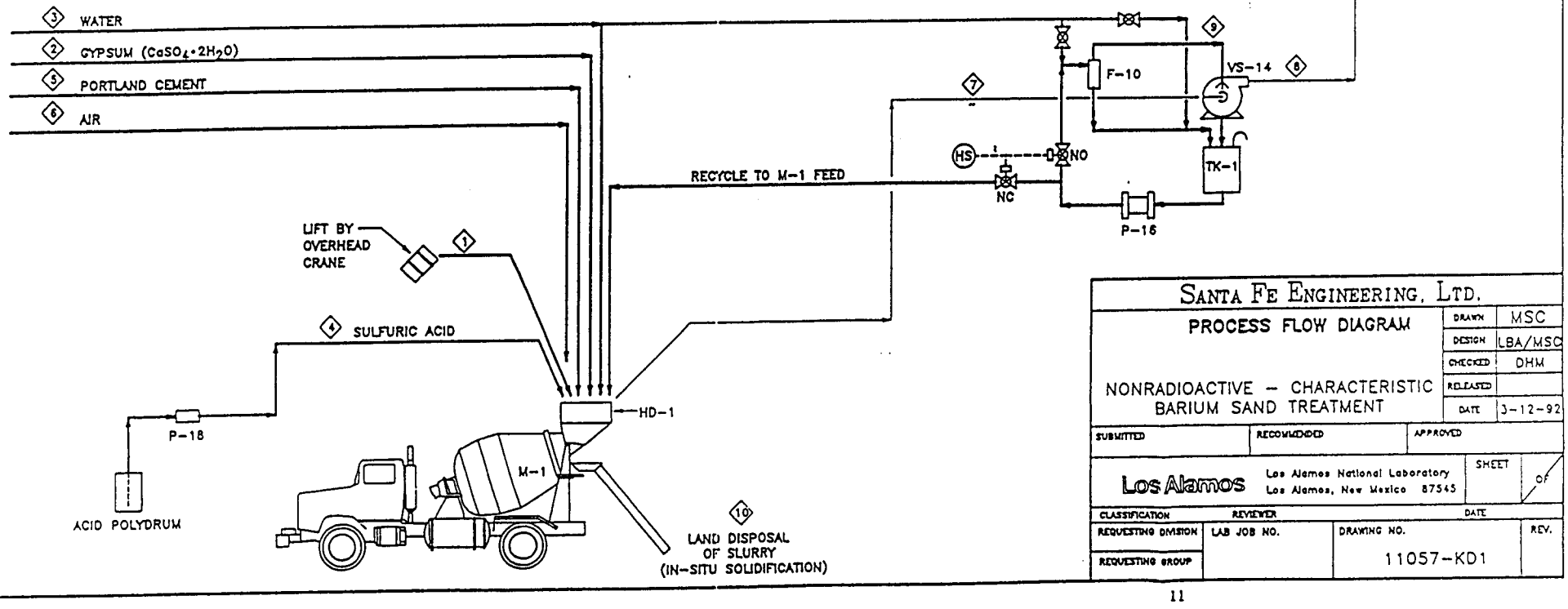


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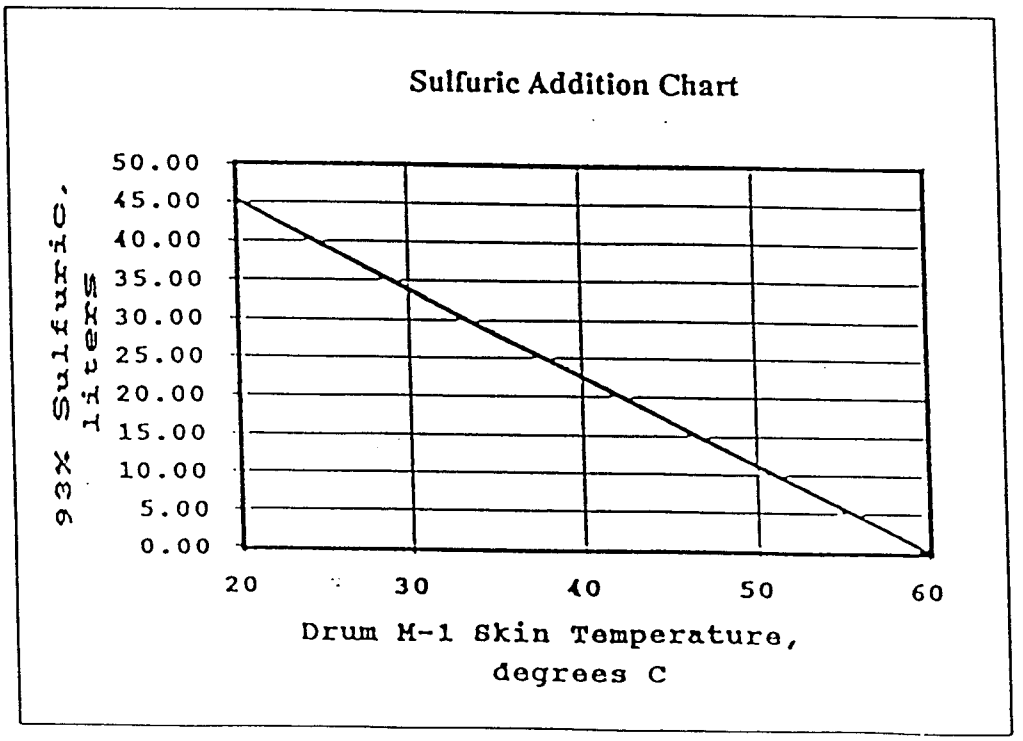
FIGURE L.1
Process Flow Diagram for the Barium Sands Truck-Mounted-Container Treatment System

FIGURE L.2

Barium Sand Checklist

			Calculated Quantity
[ ]	1.	Reset Totalizer FQI-3 to Zero.	
[ ]	2.	Fill Scrubber Tank TK-1 to 80%.	
[ ]	3.	Note Totalizer FQI-3 Reading.	[ ](a) Liters
[ ]	4.	Calculate Water Needed: [ ](b) Kg Sand *0.504 =	[ ](c) Kg
[ ]	5.	Back Truck into Place & Make Connections.	
[ ]	6.	Add Remaining of Total Water Needed to Drum M-1; Calculate Next5 Water Totalizer Stop FQI-3: [(c)] - [(a)] =	[ ](d) Kg
[ ]	7.	Attach Vent Lines to Truck Hood HD-1 and Start Scrubber (HS-14).	
[ ]	8.	Dump Barium Sand Drums into drum M-1.	
[ ]	9.	Check Exhaust Lines, Start Truck Engine & Begin Drum M-1 Rotation.	
[ ]	10.	Let Mix 5 minutes, Stop M-1 Rotation, Get Sample & Record Barium Concentration (% by Weight).	[ ](e) Percent
[ ]	11.	Calculate then Add Gypsum: ([(b)] + [(c)])* ([(e)] *0.0125 =	[ ](f) Kg
[ ]	12.	Restart M-1 Rotation and Check Drum M-1 Skin Temp	
[ ]	13.	Stop M-1 Rotation and Check Drum M-1 Skin Temp	[ ] deg C
[ ]	14.	Calculate Total 93% Sulfuric Acid Needed: ([(b)] + [(c)])* [(e)] *0.0042 = Add the Sulfuric Acid in Stages According to the Skin Temperature in the attached Sulfuric Addition Chart. The Acid should be Added to a Rotating M-1, Allowed to Mix for the Remainder of the day and then left Stationary Overnight. Experience will help the Operator Shorten the Runtime.	[ ](g) Liters
[ ]	15.	After all the Sulfuric acid has been added, Mixed and Cooled; Stop M-1 Rotation, Get Sample & Record Barium Concentration (% by Weight).	[ ](h1) Percent
[ ]	16.	If % Ba is <0.5% then Skip to Step 20.	
[ ]	17.	Calculate then Add Gypsum: ([(b)] + [(c)] + [(f)] + [(g)])* [(h1)] * 0.0125 =	[ ](i1) Kg

FIGURE L.2

Barium Sand Checklist
(Continued)

			Calculated Quantity
[ ]	18.	After 5 minutes M-1 Mixing, Calculate then Add 93% Sulfuric Acid: ([(b)] + [(c)] + [(f)] + [(g)])* [(h1] *p.0042 =	[ ](j1) Liters
[ ]	19.	Repeat Steps 15 - 19: [(h2)] [ ](i2) [ ](j2) [(h3)] [ ](i3) [ ](j3) [(h4)] [ ](i4) [ ](j4) [(h5)] [ ](i5) [ ](j5) [(h6)]	
[ ]	20.	Add Cement to M-1 (Rotation Stopped) (Round up to Full Bag Amounts): ([(SUM b, f, g, ix, jx)] *0.082 =	[ ](k) Kg
[ ]	21.	Start M-1 Mixer, Mix for 5 Minutes.	
[ ]	22.	Shut-off Scrubber (HS-14), Remove Hood and Add TK-1 Contents to Drum M-1 (HS-16).	
[ ]	23.	Deliver cement slewry to 55-gallon drums for solidifization.	
[ ]	24.	Clean truck system.