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RECEIVED
JAN 2008
NMED Hazardous Waste Bureau

Mr. John E. Kieling
Program Manager
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303

Date: January 10, 2008
Refer To: ENV-RCRA-08-003

Dear Mr. Kieling:

SUBJECT: LOS ALAMOS NATIONAL LABORATORY HAZARDOUS WASTE DRAFT PERMIT COMMENTS, PERMIT NO., NM890010515-1.

In accordance with the public notice issued on October 22, 2007 by the New Mexico Environment Department (NMED), the U.S. Department of Energy and the Los Alamos Nuclear Security, LLC, (the Permittees) hereby submit comments to the draft Hazardous Waste Facility Permit issued to the Los Alamos National Laboratory. The Permittees offer a number of substantial comments that identify specific objections with the draft permit. With these comments, the Permittees also request that a public hearing be scheduled to address these outstanding issues. We hope to reach resolution of these issues in advance of a hearing and will withdraw the hearing request upon successful negotiations.

The attached table titled "Comments on the Draft Hazardous Waste Facility Permit for Los Alamos National Laboratory" (LA-UR-08-0087) lists each comment by section, contains the appropriate permit reference, summarizes the comment, and includes alternative text to be included in the draft permit. In some cases, the suggested changes have also been included in appendices that contain changes to figures and demonstrated text changes within the text using editing marks. These appendices are:

- Appendix A - An updated version of Figure 1-1 within the Permit
- Appendix B - An updated version of Figure 2-2 within the Permit
- Appendix C - An updated version of Figure 2-6 within the Permit
- Appendix D - An updated version of Figure 2-8 within the Permit
- Appendix E - An updated version of Figure 14-1 within the Permit
- Appendix F - Attachment A containing editing marks with suggested changes
- Appendix G - Attachment C containing editing marks with suggested changes
- Appendix H - Attachment D containing editing marks with suggested changes
- Appendix I - Attachment E replacement of the LANL inspection record form

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- Appendix J - Attachment G containing editing marks with suggested changes
- Appendix K - Attachment O containing editing marks with suggested changes
- Appendix L - A summary of suggested changes to Attachment P
- Appendix M - A summary of revised Unit Type Descriptions for Tables P-1, P-2 and P-3 in Attachment P.

Provided herein is one hard copy and one electronic copy of the submittal. If you have any questions concerning this submittal please contact Jack Ellvinger at (505) 667-0633.

Sincerely,

A. R. Grieggs

Anthony R. Grieggs, Group Leader
Environmental Protection Division
Los Alamos National Security, LLC
Los Alamos National Laboratory

Sincerely,

Gene Turner

Gene Turner
Environmental Permitting Manager
Los Alamos Site Office
U.S. Department of Energy

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LA-UR-08-0087

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Title: Comments To Draft Los Alamos National Laboratory Hazardous Waste Facility Permit

Author(s): Water Quality & RCRA Group
Environmental Protection Division
Los Alamos National Laboratory

Intended for: New Mexico Environment Department

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Form 836 (7/06)

Comments on the draft Hazardous Waste Facility Permit for Los Alamos National Laboratory

Comment Number	Section of Permit	Comment	Suggested Text Change
1	General	The draft Permit addresses requirements for solid Waste Management Units (SWMUs) and Areas of Concern (AOCs), which is consistent with the March 2005 Consent Order between the New Mexico Environment Department (NMED) and the Permittees (U.S. Department of Energy [DOE] and Los Alamos National Security, LLC. [LANS]) as the Permit limits the application of these requirements to the four exceptions identified in Section III.W.1 of the Consent Order. However, the Permit language and format is difficult to follow; it is unclear when corrective action activities are regulated by the Permit and when they are subject to Consent Order requirements. In addition, there appear to be inconsistencies between the requirements of each document. Permittee compliance would be greatly enhanced by the clear statement of requirements and their applicability to currently permitted units. For example, Table O-4 identifies all of Material Disposal Area (MDA) G as a permitted unit undergoing closure, even though Permittees have not sought to permit MDA G; the Consent Order, however, identifies MDA G as a corrective action unit and includes a schedule with completion dates for the investigation of MDA G, and the evaluation and implementation of a remedy for the unit to be completed by August 31, 2015.	As a general comment, no specific language change is provided. See comment on the definition of "Permitted Units" within Section 1.8 and comments made to Table O-4 within Attachment O.
2	General	In numerous instances, noted below, the Hazardous Waste Bureau (HWB) restates an existing rule under the New Mexico Hazardous Waste Management Regulations (20.4.1 NMAC) in a manner that omits an important provision to make the rule more stringent. NMED rules that incorporate Environmental Protection Agency (EPA) rules by reference under 20.4.1 NMAC should be either incorporated by reference or stated verbatim in the Permit, but not paraphrased and drafted as a new rule with regulatory language either omitted or changed. This amounts to rulemaking and rewriting	Specific changes to address this issue are identified throughout this document, no specific language suggested with this comment.

Comment Number	Section of Permit	Comment	Suggested Text Change
		existing NMED rules to impose more stringent requirements in a permit, without going through Environmental Improvement Board (EIB) rulemaking under the Hazardous Waste Act (HWA).	
3	Fact Sheet Appendix	The appendix to the Fact Sheet contains descriptive information for several hundred sites subject to corrective action that are not currently included in Module VIII of Los Alamos National Laboratory's (LANL's) Hazardous Waste Facility Permit. The appendix states that these sites are being included in Table P-1 of the draft Permit. The information provided in the appendix to the Fact Sheet is not necessary to support issuance of the draft Permit and some of the information presented as factual may be outdated. Section 11.2.1 of the draft Permit notes that Table P-1 lists all sites at LANL that are subject to corrective action under the Consent Order. Therefore, all of the sites included in the appendix to the Fact Sheet are subject to corrective action under the Consent Order. These sites are listed in Table P-1 of the Permit for tracking purposes, but there are otherwise no requirements for these sites under the Permit. The sites included in appendix to the Fact Sheet were all included in the *Aggregate Area List; Maps of TAs, SWMUS, and AOCs* report that was submitted to the HWB by LANL on August 26, 2005. This submittal, which was required by Section V.B of the Consent Order, identified all SWMUs and AOCs located within each aggregate area subject to investigation under the Consent Order. Therefore, the basis for implementing corrective actions at these sites under the Consent Order has already been established in the administrative record and the information presented in the Fact Sheet appendix is not needed to establish that these sites should be listed in Table P-1 of the draft Permit. LANL also notes that the site descriptions and references presented in the Fact Sheet appendix may not reflect current conditions at all sites. Some of the	This appendix should not be included as part of the Fact Sheet for the final permit. See also comments made to Attachment P, Table P-1.

Comment Number	Section of Permit	Comment	Suggested Text Change
		sites have been subject to recent or on-going investigation activities under the Consent Order that have not yet been reported to the NMED.	
4	Part 1, Section 1.3	As drafted, the last sentence of this section suggests that the HWB can impose any condition it chooses "that may potentially extend beyond requirements of other regulations." To impose a permit term or condition under Title 40 of the Code of Federal Regulations (40 CFR) §270.32(b), however, the Department must show that it is necessary to "protect human health and the environment" and this must be based upon the administrative record (see also NMSA 1978, 74-4-4D). The existing language is ambiguous and can be construed to go beyond NMED authority. The suggested change clarifies this authority.	Page 1, Lines 28-29: Please revise the final sentence of the section from "Permit terms and conditions that may potentially extend beyond requirements of other regulations are supported by 40 CFR § 270.32(b)(2)." to read: "<u>The Department may impose permit terms and conditions as necessary to protect human health and the environment if authorized under 40 CFR § 270.32(b)(2).</u>"
5	Part 1, Section 1.4	The first sentence in this section appears to narrowly restrict compliance to "those management practices specifically authorized by this Permit." NMED rules at 40 CFR §270.4 provide that compliance with the Resource Conservation and Recovery Act (RCRA) permit during its term constitutes compliance for purposes of RCRA with all requirements in the Permit, not just "management practices". This is consistent with other RCRA permits issued by NMED and federal law. The suggested change clarifies this issue.	Page 1, Line 31 Change the text as follows: "Compliance with this Permit ~~for those management practices specifically authorized by this Permit~~ during its term shall constitute compliance, for purposes of enforcement, with Subtitle C of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §6901 et. seq., and/or the HWA, and/or the implementing regulations at 40 CFR Parts 264, 266 and 268 except for those requirements that become effective by statute after the Permit has been issued (40 CFR § 270.4)."
6	Part 1, Section 1.4.1	Information that is tracked by the table referenced within this section should be for informational purposes only because there is no regulatory requirement that could be found to support the inclusion of this information within the Permit. Changes to the interim status units within Table O-5 and corrections to the table should not require permit modification from LANL.	Page 2, Lines 11-15: Please delete this section and Table O-5 in Attachment O. If the section remains, add the following language to the end of the section: "<u>Tracking and other information within Table O-5 is for informational purposes only. Changes to the interim status units within Table O-5 and corrections will not require permit modification from the Facility.</u>"
7	Part 1, Section 1.6.3	The proposed condition appears to require NMED pre-approval prior to transfer of any land within the 40 square mile boundary at LANL. LANL property	Page 3, Lines 20-26: Consistent with the land transfer provisions of the Order on Consent,

Comment Number	Section of Permit	Comment	Suggested Text Change
		boundaries encompass land that is not RCRA-regulated (e.g., that contains no regulated units, SWMUs or AOCs). Under these circumstances, it is not certain that EPA or NMED could require the facility to obtain "pre-approval" prior to transferring these types of lands. NMED's rules relating to property transfers do not go this far (e.g., Class 1 process to update property boundaries and transfer of the facility to a new owner or operator). LANL must comply with property transfer requirements of the Order on Consent for those SWMUs and AOCs that are subject to this Order. LANL would agree to the inclusion of a property transfer provision based on the Order on Consent for future SWMUs and AOCs subject to corrective action under the Permit. Further, LANL is also subject to applicable Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requirements for land transfer.	section III.Y, please limit the applicability of this section to that regulated under this Permit as follows: "The Permittees shall submit a Permit modification request, in compliance with all requirements of 40 CFR §270.42 and 20.4.1.900 NMAC, at least 180 calendar days prior to the proposed effective date of transfer of ownership of any Facility property that is subject to any requirement under this Permit. The Permit modification request may be submitted as a Class 3 Permit modification, or the Permittees may request a determination that the modification is a Class 1 or 2 pursuant to 40 CFR §270.42(d)." The remainder of the section remains unchanged.
8	Part 1, Section 1.6.7	The permit condition allows the HWB to initiate a 5-year permit review for the entire permit. NMED rules at 40 CFR §270.50, however, provide that the agency may conduct a 5-year review for land disposal units (e.g., as an agency-initiated modification under 40 CFR §270.41). LANL's permit will address the closure of certain land disposal units, but the facility has not proposed to permit any of these units. LANL suggests limiting the 5-year review to the closure and post-closure of its land disposal units, and not the entire permit. While a 5-year review is appropriate for land disposal units, required review for non-land disposal units is unnecessary and would place a substantial burden and cost on the facility. Further, NMED may modify the Permit at any time during its term under its rules and Section 74-4-4.2 of the HWA.	Page 4, Line 30: Please change the first sentence to read: "The Department may review this Permit 5 years after the effective date of Permit issuance for those portions of this Permit that affect the closure or post-closure of the land disposal units included in this Permit and may modify this Permit as necessary pursuant to Section 74-4-4.2 of the HWA and 40 CFR §§ 270.41 and 270.50(b)."

Comments on the draft Hazardous Waste Facility Permit for Los Alamos National Laboratory

Comment Number	Section of Permit	Comment	Suggested Text Change
9	Part 1, Section 1.7.1	Suggested change is editorial and adds punctuation for clarity.	Page 5, Lines 3-5: Please change the section to read: "The provisions of this permit are severable. I~~i~~f 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."
10	Part 1, Section 1.7.2	The language in this section is confusing insofar as it discusses potential conflicts with language interpretation.	Page 5, Lines 7-11 and 12-16: Please simplify the statements. Change the section that reads: "Portions of the Application are incorporated into this Permit as Attachments. The Department has modified the Application language to make it consistent in all aspects with the permit conditions and applicable regulations. However, if there is a conflict between the language of a permit condition and the language of the Permit Attachment, the language of the permit condition shall control over the language in the Permit Attachment. This Permit and 40 CFR Parts 264, 266, and 268 establish the minimum requirements for the design, construction, operation, and maintenance of the Facility. Any language in an Attachment, which states or implies discretion to not comply with the minimum requirements of this Permit or 40 CFR § 270.32(b)(1), is not effective and the requirements of this Permit and 40 CFR § 270.32(b) shall control." to read: "In the case of any conflict between the conditions of the Permit (Parts 1 through 16) and the conditions in an attachment (Attachments A through T), the language in the permit condition shall control. No language in any attachment should be read to state or imply that Permittees have discretion not to comply with the minimum requirements for the design, construction, operation and maintenance of the facility which are included in this Permit and in 40 CFR Parts 264, 266, and 268."
11	Part 1, Section 1.8	The definition of acceptable knowledge given here restricts some sources of potential information for generators using this method of waste characterization. This is the phrase "waste analysis data from generators of similar waste." LANL interprets this as a relatively narrow limitation of potential sources for waste	Page 5, Lines 23-25: Please change the definition as follows: "*Acceptable Knowledge* means generator knowledge of the process that generated a waste, including but not limited to, process knowledge, waste analysis data from generators of similar wastes, additional

Comment Number	Section of Permit	Comment	Suggested Text Change
		information as it seems to restrict the information to that obtained only by other generators. U.S. Environmental Protection Agency guidance for acceptable knowledge ("EPA Waste Analysis at Facilities That Generate, Treat, Store, and Dispose of Hazardous Wastes, A Guidance Manual," April 1994) does not make this distinction. LANL has suggested the use of the term "additional characterization data" in the permit application and as now included in Attachment C (*Waste Analysis Plan*), of this Permit. This term allows a broader range of potential information sources.	characterization data, and facility records of analysis performed before the effective date of RCRA."
12	Part 1, Section 1.8	Change the definition of Disposal Unit to be consistent with the definition contained within 40 CFR §260.10.	Page 6, Lines 1-2: Please change the definition of Disposal Unit to be: "Disposal Unit means any unit at a facility or part of a facility at which hazardous waste is intentionally placed into or on any land or water, and at which waste will remain after closure. The term disposal facility does not include a corrective action management unit into which remediation waste are placed."
13	Part 1, Section 1.8	NMED defines a hazardous constituent as any constituent identified in Part 261 Appendix VIII, which lists hazardous constituents, and anything identified in Part 264 Appendix IX, which is the ground water monitoring list. The regulations define a "hazardous waste constituent" as any constituent that caused EPA to list the hazardous waste in Part 261 Subpart D of a constituent listed in Table 1 of 40 CFR 261.24, which lists contaminants for the toxicity characteristic. Appendix VIII of Part 261, titled hazardous constituents, is consistent with the definition in the rule; Appendix IX of Part 264, the ground water monitoring list, is not part of the definition of "hazardous waste constituent." To be consistent with the rules, and for clarity, replace the definition of hazardous constituent as suggested.	Page 6, Lines 22-23: Please replace the definition of "Hazardous Constituent" to "Hazardous Waste Constituent means a constituent that caused the EPA to list the hazardous waste in 40 CFR Part 261, Subpart D, of this chapter, or a constituent listed in table 1 of 40 CFR § 261.24."

Comments on the draft Hazardous Waste Facility Permit for Los Alamos National Laboratory

Comment Number	Section of Permit	Comment	Suggested Text Change
14	Part 1, Section 1.8	Suggested change of the definition of Hazardous Waste is consistent with the definition in 40 CFR § 260.10. As drafted, the definition of hazardous waste appears incomplete and duplicative. Suggest revising as follows and striking number 3 on the basis it appears redundant to number 2.	Page 6, Lines 24-31: Change the definition to be: "means a solid waste that is: 1) not excluded from regulation under 40 CFR § 261.4(b); 2) is ~~either~~ listed in 40 CFR Part 261, Subpart D, 3) exhibits any of the characteristics identified in 40 CFR Part 261, Subpart C, or 4) is derived from, or ~~is a~~ mixture of solid waste under 40 CFR §§ 261.3(c)~~; and 3) is one or more wastes listed in 40 CFR Part 261, Subpart D~~. However, for purposes of corrective action, "hazardous waste" shall have the meaning set forth in the HWA, Section 74-4-3(K). Hazardous waste may be a "mixed waste," which means it is waste that contains both hazardous waste subject to the HWA and RCRA, and source, special nuclear, or byproduct material subject to the Atomic Energy Act."
15	Part 1, Section 1.8	Change the definition of Land Disposal to be consistent with the definition contained within 40 CFR §268.2(c). As drafted, the existing definition does include exceptions such as staging pile or corrective action management units.	Page 7, Lines 7-9: Please change the definition to be: "Land Disposal means placement in or on the land, except in a corrective action management unit or staging pile, and includes, but is not limited to, placement in a landfill, surface impoundment, waste pile, or placement in a concrete vault, or a shaft intended for disposal purposes."
16	Part 1, Section 1.8	"Permitted unit" should be clearly defined because clarity is essential for compliance and enforceability of the Permit. LANL suggests the following changes to ensure clarity and consistency with NMED rules. LANL suggests deleting number 2 within the definition because it is included in 4. If a unit does not meet this definition, then the HWB should clearly identify any such unit to allow LANL to review and determine whether the agency has properly identified a regulated unit. The suggested changes also reflect comments made to Table O-4 in Attachment O.	Page 7, Lines 15-19: Please change the definition of Permitted Unit to be: "a hazardous waste management unit that is: 1) actively managing waste or in closure or post-closure care; 2) not an interim status unit; and 4) listed in Attachment O (*Hazardous Waste Management Units*), Table O-1 (*Permitted Units Actively Managing Hazardous Waste*), or Table O-2 (*Permitted Units Undergoing Post-Closure Care*), or as a Permitted Unit in Table O-4 (*Units Undergoing Closure*)."
17	Part 1, Section 1.8	The definition of Storage should be consistent with the definition contained within 40 CFR §260.10. As drafted, the permit condition omits NMED regulatory language defining "storage" to mean "at the end of which the hazardous waste is treated, disposed of, or	Page 7, Lines 34-35: Please change the definition to be: "Storage means the holding of hazardous waste for a temporary period, at the end of which the hazardous waste is treated, disposed of, or stored elsewhere."

Comment Number	Section of Permit	Comment	Suggested Text Change
		stored elsewhere." There is no basis to omit the term "storage" as used in NMED rules.	
18	Part 1, Section 1.8	There are typographical errors within the definition of Solid Waste Management Unit.	Page 7, Line 28: Change "in" to "at." Page 7, Line 29: Change "by" to "be"
19	Part 1, Section 1.8	The proposed definition of "release" appears to be based on RCRA guidance with the exception of the phrase "inside a permitted unit." A "release" can occur inside a permitted unit, be immediately contained within the unit, and never be released into the environment. For this reason, LANL recommends deleting the term "inside a permitted unit."	Page 7, Lines 22-26: Please change the definition to be: "means any accidental or intentional spilling, leaking, pouring, emitting, emptying, discharging, injecting, pumping, escaping, leaching, or dumping of any hazardous waste or hazardous constituent ~~inside a permitted unit~~ to the environment including the abandonment or discarding of barrels, containers, and other closed receptacles containing hazardous waste or hazardous constituents.
20	Part 1, Section 1.8	Change the definition of Waste Stream to be consistent with the use of this definition within Part 2 and the Waste Analysis Plan (Attachment C) of this Permit.	Page 8, Lines 6-8: Please change the definition of "Waste Stream" as follows: "Waste Stream means each waste material generated from a single process or from an activity that is similar in ~~input materials~~ material, physical form, and hazardous constituents, and is distinguishable from other ~~wastes~~ waste material by EPA Hazardous Waste Numbers and Land Disposal Restriction status."
21	Part 1, Section 1.9.7	All scientific and technical information generated at the Laboratory and intended for public release must be reviewed and processed before publication to ensure that the publication release occurs in accordance with the requirements of the Atomic Energy Act of 1954 (42 U.S.C. 2011 et seq.), the Energy Reorganization Act of 1974 (P.L. 93-438), and Department of Energy (DOE) Order 241.1 regarding restricted information. As a result of that review, documents may be subject to security provisions that may restrict viewing to authorized personnel requiring a need to know (e.g., classified document). LANL has cooperated with the	Suggest adding the following text to the end of the section: "The Department 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 Department and the Permittee shall cooperate in working with the appropriate Federal agency to obtain approval for access to restricted information. Nothing in this permit section shall be construed to deny access to information authorized by RCRA."

Comment Number	Section of Permit	Comment	Suggested Text Change
		HWB on procedures for the submittal of documents to the HWB that require such controls since the issuance of the original LANL RCRA Hazardous Waste Facility Permit of 1989 and intends the same for the renewal of the Permit. The language used for access control in the original permit (Section I.D.8.e) has been sufficient to address a similar issue and it is suggested that it be modified for inclusion in this section.	
22	Part 1, Section 1.9.8	Suggested change clarifies the process when security issues are associated with providing copies of sensitive or classified information.	Page 10: Please add the following to #4: "have access to, and copy, any records that must be kept under the conditions of this Permit (pursuant to Section 1.9.7); and"
23	Part 1, Section 1.9.8	LANL has cooperated with NMED on procedures for access to facilities that require security controls since the issuance of the original LANL RCRA Hazardous Waste Facility Permit of 1989 and intends the same for the renewal of the Permit. The language used for access control in the original permit (Section I.D.8.e) has been sufficient to address this issue and it is suggested that it be included in this section.	Page 10: Please add the following as #6: "The Department 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 Secretary 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 RCRA."
24	Part 1, Section 1.9.9.1	The permit condition appears to go beyond sampling and measurements taken for the monitoring activity, as provided for in 40 CFR §270.30(j)(1). Instead, it appears that NMED has re-written the rule at 40 CFR §270.30(j)(1) in a manner that omits an important clause thus making the requirement more stringent than and inconsistent with its existing rules. Suggested text limits sampling and measurements to monitoring activities. LANL's permit application did not suggest this permit condition and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	Page 10, Lines 20-21: Please change the first sentence of the section from: "All samples and measurements taken by the Permittees under any condition in this Permit shall be representative of the activity, waste, media, equipment, or structure being sampled or measured." to read: "Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity."

Comments on the draft Hazardous Waste Facility Permit for Los Alamos National Laboratory

Comment Number	Section of Permit	Comment	Suggested Text Change
25	Part 1, Section 1.9.9.2	The proposed permit condition appears to require all records to be retained for the life of the facility (until closure or post-closure certification). NMED rules at 40 CFR §264.73, however, impose varying record retention times depending on the type of document. Suggested revision will clarify that the record retention times should be consistent with NMED rules.	Page 10: Please replace the section that reads: "The Permittees shall retain copies of all reports and records required by this Permit including, but not limited to, records of all data used to complete the Application, data gathered or generated during the closure or post-closure process, laboratory reports, drilling logs, bench-scale or pilot scale data, and supporting information in accordance with the retention times specified for the Facility Operating Record at Permit Section 2.12.2 (40 CFR § 270.30(j)(2))." With the following: "The Permittees shall maintain copies of the reports and records required by this Permit in accordance with the retention times required by 40 CFR §264.73, and as specified at Permit Section 9.5 and 10.2.3."
26	Part 1, Section 1.9.10	This language suggests that reporting requirements under 40 CFR §270.30(l)(1) applies to any change to the LANL facility, instead of changes to the permitted units. This rule and the preamble discussing this rule clearly state that this notice requirement applies to "permitted" units which are hazardous waste management units, and not the LANL facility as a whole. To the extent that NMED omitted the term "permitted" from this rule, it is rewriting the rule at 40 CFR §270.30(l)(1) to make it more stringent than and inconsistent with its existing rules. Suggested change is consistent with the regulation 40 CFR §270.30(l)(1). LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	Page 11, Lines 2-4: Please change text to read: "The Permittees shall give notice to the Department, as soon as possible, of any planned physical alterations or additions to any of the hazardous waste management units covered by this Permit~~the Facility~~, in compliance with 40 CFR § 270.30(l)(1), which is incorporated herein by reference."
27	Part 1, Section 1.9.11	This language suggests that reporting requirements under 40 CFR §270.30(l)(2) apply to any planned changes to the LANL facility as a whole, instead of changes to the permitted facility. To the extent that all changes to the facilities could be required to be reported	Page 11, Lines 6-8: Please change text to read: "The Permittees shall give advance notice to the Department of any planned changes to any of the hazardous waste management units or

Comment Number	Section of Permit	Comment	Suggested Text Change
		under this provision, NMED rewrites the rule at 40 CFR §270.30(l)(2) in a manner that omits an important clause thus making the requirement more stringent than and inconsistent with its existing rules. Suggested change is consistent with the regulation 40 CFR §270.30(l)(2). LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	activities ~~the Facility~~that may result in noncompliance with Permit requirements in compliance with 40 CFR § 270.30(l)(2), which is incorporated herein by reference."
28	Part 1, Section 1.9.12.1	NMED rules do not appear to impose a 24-hour notice requirement for every incident which triggers implementation of the Contingency Plan (see 40 CFR §264.56). Suggested revisions distinguish between the regulatory requirements at 40 CFR §264.56 (Emergency Procedures) and 40 CFR §270.30(l)(6) (Twenty-four hour reporting). See also NMSA 1978, 74-4-4D.	Page 11, Lines 15-17: Please revise to read: "The Permittees shall make an initial oral report within 24 hours from the time Permittees become aware of a noncompliance that may endanger human health or the environment ~~or incident under Permit Section 1.9.12 of that includes the following~~ (40 CFR § 270.30(l)(6(i):"
29	Part 1, Section 1.9.12.1	NMED rewrites the rule at 40 CFR §270.30(l)(6)(i) in a manner that includes the term "hazardous constituent" not present in the existing rule to make the requirement more stringent than it existing rules. Additionally, the second bullet should be changed for consistency with the rule at 40 CFR §270.30(l)(6)(i). The regulation at 40 CFR §270.30(l)(6)(i) contains the term "hazardous waste management facility" and the suggested change clarifies that the waste management units at LANL should make up the hazardous waste management facility, not the 40 acres of the entire LANL facility. These changes clarify the circumstances to which the 24-hour oral reporting requirement applies. Further, LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	Page 11, Lines 18-22: Please change bullet #1 to read: "information concerning the release of any hazardous waste~~ or hazardous constituent~~ which may endanger public drinking water supplies;" Please change bullet #2 to read: "information concerning the release or discharge of any hazardous waste ~~or hazardous constituents,~~ or of a fire or explosion at ~~the Facility~~any of the hazardous waste management units, which may threaten the environment or human health outside the unit~~Facility~~; and"
30	1.9.12.2	This section should be revised to be consistent with the regulations which provide for a written report within	Page 12, Lines 9-19:

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		five days for any noncompliance that may endanger human health or the environment (40 CFR §270.30(l)(6)).	Please delete "or incident" from lines 9 and 10.
31	1.9.12.2	Page 12, Lines 12-26: This language is not consistent with 40 CFR §270.30(l)(6)(iii), which describes the information to be included in the written report due within 5 days of a noncompliance that may endanger human health or the environment.	Page 12, Lines 12-26: Please revise bullets 1 through 10 to be consistent with the requirements of 40 CFR §270.30(l)(6)(iii).
32	1.9.13	Please clarify which monitoring reports should be used to trigger the time period for reporting noncompliance under this section.	Pages 12-13: No specific language change is suggested. LANL needs clarification from the HWB.
33	Part 1, Section 1.9.15	The permit condition omits the term "and" as provided under 40 CFR §270.11(b).	Page 13, Lines 9-11: Please change the text to read: "The Permittees shall sign and certify all applications, reports, or information submitted to ~~or requested by~~ the Department ~~or~~and required by this Permit, in compliance with 40 CFR §§ 270.11 and 270.30(k), which are incorporated herein by reference."
34	Part 1, Section 1.10	NMED rules for information repositories (40 CFR §124.33 and 40 CFR §270.30(m)) do not specify the physical form or formats for the information contained in the repositories. Specifically, the draft Permit states that "complete, legible, hard copies (and electronic copies if available)" must be provided. This requirement, however, is excessive and not based on NMED rules. Further, compliance with the requirement may not be possible. As drafted, some of the required information would be historical and produced prior to issuance of the original permit, and LANL may not be able to obtain or provide "complete" and "legible" copies. In addition, it is duplicative and burdensome to store records in both hard copy and electronic format, and this condition should be omitted.	Page 14, Lines 3-22: Section 1.10 should be revised to replace "complete, legible, hard copies " with "reasonably available copies". Please revise lines 6, 11, and 16 to delete "(and electronic copies if available)".
35	Part 1, Section 1.10	Although LANL supports facilitating public review, the information repository requirements contained in	Page 14, Lines 4-22:

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		Section 1.10 of the draft Permit (page 14, lines 4–22) are excessive in that the information required is voluminous, not clearly defined and includes activities not covered by the Permit. The requirements of this section should apply only to information related to the Permit and permitted activities, and should be clear. NMED rules for information repositories are contained in the regulations addressing RCRA permit applications (40 CFR §124.33) and permits (40 CFR §270.30(m)). Specifically: Bullet 2 (lines 6-10) should be deleted. Much of the information identified in bullet 2 is repeated in bullet 4. In addition, bullet 2 requires "all documents relating to Permittee's previous activities which resulted or may have resulted in the generation, management, or actual or potential release of solid waste, hazardous waste, or hazardous constituents…." Documents relating to the past generation and management of solid or hazardous waste are outside the scope of this permit. The remainder of the information called for in Bullet 2 relates to corrective action activities under the Consent Order and are not regulated by this permit. In some cases this condition appears to require the addition of parts of an active database(s) to the information repository which is not feasible because information is continuously added to active databases. The draft Permit imposes prescriptive conditions not required by the rule by requiring LANL to provide hard copies, electronic copies if available in addition to a searchable database that contains an index of all documents stored in the repository. Although LANL supports facilitating public review, the information required should only be those reflected in NMED rules as adopted by the EIB, and do not prescribe that a TSDF provide public access through a searchable database as well as hardcopies, and electronic copies.	Bullet 2: Please delete. Bullet 3: Please change to bullet 2 and revise to read: "Copies of all reasonably available public documents relating to the Permittees' Part A, and Part B Permit Applications, this Permit, and interim status Closure Plans, and Post-Closure Care Plans, including abut not limited to correspondence, reports, data, photographs, maps, figures, drawings, tables, attachments, enclosures, and appendices." Bullet 4: Change to bullet 3 and please revise as follows: "Copies of all reasonably available public documents relating to sampling, monitoring, investigation, clean up, and corrective action of solid waste, hazardous waste, or hazardous constituents, conducted at LANL under this permit, including but not limited to, work plans, evaluations, historical reports, data, photographs, engineering drawings, maps, figures, drawings, tables, attachments, enclosures, and appendices; and" Bullet 5: Please delete.

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		In other areas, the requested documents are redundant, imposing an unnecessary burden on the Permittees. Finally, some of the information submitted to the HWB with the permit application is designated "Unclassified Nuclear Information (UCNI)." It is not publicly available information and cannot be included in any information repository. It is therefore appropriate to limit the information repository to documents that are publicly available. Additionally, changes to bullet 4 (line 17) correct a typographical error.	
36	Part 1, Section 1.11	The requirements of this section are confusing; they appear to adopt some regulatory requirements as written and expand upon others. • Numbers 1, 2, 3, 5, 7, 14, and 15 appear to be satisfied by maintaining a copy of the permit applications (Part A and Part B), current Permit and Attachments at the Facility. • Number 4 seems to modify the requirement at 40 CFR §264.73(b)(3) to maintain, as they becomes available, records and results of waste analyses and waste determinations as specified by specific sections of 40 CFR Parts 264 and 268. As written, the draft permit condition exceeds the regulatory requirement. The regulations require that records of all analyses be maintained; the Permit requires chemical and physical analyses of all wastes. Some wastes are appropriately characterized by process knowledge or product information and are not analyzed chemically. • Number 6 cites 40 CFR §264.14, but requires security procedures and a listing of security equipment, which are not, in fact, required by the regulations. • Number 8 cites 40 CFR Part 264 Subpart C, but requires "preparedness and prevention procedures," which are not required by Subpart C. 40 CFR	Pages 15-16, Lines 1-33 and 1-9: Please revise to be consistent with the regulations. Specifically, revise bullet number 4 to reflect the regulatory requirements. Delete bullet number 6. Delete the requirement for procedures from bullet number 8; the remainder of that requirement is addressed in the Permit. Delete bullet number 11 or revise to limit these conditions to the hazardous waste management units. Revise bullet number 12. Delete bullet number 16. Delete "acceptable to the Department." from line 9, page 16.

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		§264.56 describes the steps the emergency coordinator must take in response to an imminent or actual emergency situation. No further procedures are required. The requirement in number 8 to list equipment identified in Subpart C is satisfied by information included in the Permit and Attachments. The requirement in number 10 to maintain copies of all Memoranda, Aid Agreements and contracts with emergency contractor and suppliers is vague and beyond the requirements of 40 CFR §264.56(j). • The requirements of number 11 are vague and go far beyond the information required by the regulations. • Number 12 should require "documentation of" the special precautions. • Number 16 does not apply to DOE facilities. Finally, the regulations identify the information that must be maintained, but do not address the format of the records. The format of records is not subject to HWB approval.	
37	Part 1, Section 1.12	Although required for corrective action, community relations plans are not required for operating permits under NMED rules. There are no NMED rules that impose this requirement. Further, NMED rules provide for public participation in all steps in the permitting processes (e.g., application, permit modifications). A requirement for Permittees to maintain a mailing list for the operating permit separate from that maintained by the HWB is confusing, and annual notifications and other requirements under the plan as applied to operating units are onerous and problematic. The scope of these requirements is extremely broad, and would require considerably more human resources to comply with these requirements and respond to public comments.	Page 16, Lines 10-31: Please limit the requirement for community relations plan to apply only to corrective action required under the Permit, closure and post-closure activities.
38	Part 1, Section 1.13.3	As drafted, dispute resolution applies to all submittals under the Permit, potentially including over 167 different types of reports, documents, and other	Page 17, Lines 16-17: Revise section to clarify that the Department cannot incorporate changes to the permit through dispute resolution that are required to

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		"submittals." Dispute resolution procedures are common and have been adjudicated to be appropriate for HWA (corrective action) modules to satisfy the Permittees' due process concerns arising from revisions to submittals made by an agency without the opportunity to respond to or dispute conditions in corrective action submittals. LANL recognizes that dispute resolution, particularly as applied to corrective action, can be a useful tool to address disputes and provide an administrative record for dispute resolution. As applied to all submittals under the Permit, however, including RCRA's Part 264 and Part 270 requirements dispute resolution provision raises a few concerns. The dispute resolution provision states at Section 1.13.3 that any final decision concerning a disputed submittal (or conditions of a submittal) "shall be incorporated as an enforceable part" of the Permit. This provision, in turn, appears to directly conflict with permit modification procedures under 40 CFR §§270.41 and 270.42 insofar as it effectively bypasses the public participation requirements, including public notice, public comment and other procedural protections. For example, LANL may submit a document required by the Permit (e.g., closure plan, monitoring reports, changes to a waste analysis plan, and others) and "dispute" certain requirements imposed by the NMED related to the submittal. Any change resulting from the "final decision" of the dispute would be incorporated *per se* into the Permit without following the permit modification procedures and public participation. 40 CFR Part 270 procedures, in turn, explicitly identify many of these same types of changes to 40 CFR Part 264 documents as a Class 1, Class 1*, Class 2 or Class 3 modification. Even changes made to the permit to correct typographical errors require a "permit modification." It is unclear how the existing dispute resolution procedures can be implemented without potentially conflicting with, or undermining the public	follow 40 CFR Part 270 procedures. Please change the second to the last sentence as follows: "Such a decision shall be the final resolution of the dispute and shall be incorporated as an enforceable part of this Permit, unless the change requires a permit modification under 40 CFR §§ 270.41 or 270.42. Nothing in this section shall be construed to limit, change, or otherwise abrogate Permittees right to challenge or appeal an agency decision, or otherwise limit its procedural rights under NMED rules, including 40 CFR Parts 264 and 270."

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		participation procedures of 40 CFR Part 270. In addition, many of the types of submittals (and required time-frames) are required under the Permit pursuant to NMED substantive rules under 40 CFR Parts 270 or 264. These would include reporting requirements, submittals of closure and post-closure plans, detection monitoring, and others.	
39	Part 1, Section 1.14	The second sentence requires written notice of compliance with the schedule to be provided no later than 14 days, unless a submittal requirement is met. This requirement is confusing insofar as all requirements under the schedule are submittals and as such could be read to defeat the notice requirement entirely.	Page 17, Lines 27-28: Suggest deleting the clause, "unless a submittal requirement is met".
40	Part 1, Section 1.14	The permit condition allows extensions to submittal and activity due dates in the compliance schedule (Attachment N) with the permit modification procedures of 40 CFR §271.41(agency modification) and 40 CFR §271.42. Extensions to compliance schedule deadlines under 40 CFR §270.42 authorize modification to interim compliance deadlines as a Class 1* (with prior director approval) or final compliance deadlines as a Class 3. As drafted, any change to the compliance schedule can be interpreted to mean a final compliance deadline requiring a Class 3 modification. Due to the restrictive time lines (e.g., five days to 180), it would be impossible for LANL to obtain approval as a Class 3 modification from any compliance deadline extension. Class 3 changes can take over a year to process, and include the right to a hearing. Further, there are no deadlines for agency review of Class 1*s. Further, the procedures under 40 CFR §270.41 do not apply to Permittees and require the agency to follow 40 CFR Part 124 procedures, which are considerable and include the right to a hearing.	Page 17, Lines 32-33: Please strike the sentence "Extension of submittal or activity due dates may be granted by the Department in accordance with 40 CFR §§ 270.41 or 270.42." Revise Section 1.14 to allow an extension to a submittal or activity based on good cause or within the text of Attachment N.
41	Part 1, Figure	Figure 1-1 should be updated with current LANL	Updated figure has been included with this document as Appendix A.

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	1-1	boundary as included with "Los Alamos National Laboratory Hazardous Waste Facility Permit Five Class 1 Permit Modifications," submitted on December 18, 2007.	
42	Part 2, Section 2.2.1	In Revision 2.0 of the General Part B permit application, submitted to NMED in August 2003, Permittees proposed language to allow return of waste or waste treatment residues to LANL that had been generated at LANL and shipped to an off-site treatment facility. The waste or treatment residues are returned to LANL for storage and/or further treatment prior to shipment off site for final disposition. The proposed permit condition allows for LANL to accept waste under these circumstances.	Page 19: Suggest inserting the following language after line 20: "4. Any waste sent off site from LANL for treatment and subsequently returned to the Facility for storage or further treatment prior to final disposition off site."
43	Part 2, Section 2.2.1	Permittees propose language not previously included in the permit application to enable receipt of mixed waste sealed sources from off-site locations. Pursuant to the Atomic Energy Act, the Low Level Waste Policy Act, and the Low Level Policy Act Amendments, LANL has implemented an off-site source recovery program to recover and manage radioactive sealed sources from sites within and outside the country. Most sealed sources are managed as radioactive material, and only a few can be accepted for disposal at the Waste Isolation Pilot Plant (WIPP). A permit condition allowing the receipt of this specific waste type is requested so the Permit would not have to be modified prior to receipt of any shipment of this waste to LANL.	Page 19: Suggest inserting the following language after number 4 above: "5. Any mixed waste radioactive sealed sources sent to LANL for management or final disposition at Waste Isolation Pilot Plant through the Off-Site Source Recovery Program."
44	Part 2, Section 2.2.2.1	Permittees propose language not previously included in the permit application to enable receipt of mixed waste sealed sources from off-site locations in support of DOE's off-site source recovery program. Please see comment above.	Page 19, Lines 23-24: Please change the section to read: "The Permittees shall not accept, store, treat, or otherwise manage at permitted units at the Facility hazardous waste from foreign sources except for mixed wastes brought to LANL through the Off-site Source Recovery Program."
45	Part 2, Section 2.3.1	Line 6: To clarify the requirement, use language from 40 CFR §268.50.	Page 20, Line 6. Suggest insert "restricted from land disposal" after "hazardous

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		Lines 9-11: DOE and Los Alamos National Security (LANS) note that under the Federal Facility Compliance Act, mixed wastes may be stored longer than 1 year provided they are stored in compliance with the Federal Facility Compliance Order (FFCO). A mixed waste can be stored in compliance with the FFCO, but not yet formally "included in the STP" due to the administrative time lag. Under these circumstances, the proposed draft permit condition would subject LANL to liability for long-term storage violations for mixed wastes that have been proposed for inclusion under the FFCO (but not yet formally included), a result not intended by the Act. Suggested change clarifies that the mixed waste may be stored longer than 1 year, provided they are stored in compliance with the FFCO. Lines 12-15: The language is unclear and very difficult to understand regarding Permittees obligations. The term "cumulatively" is vague and undefined and the proposed condition can be read to prohibit storage of hazardous waste even if waste is stored less than one year. DOE and LANS were unable to determine what the intent and source of this permit condition is from the administrative record.	waste." Lines 9-11: Please modify the current language to read: "that a mixed waste is ~~included in the Site Treatment Plan (STP) under the Federal Facility Compliance Order (FFCO) and such storage is otherwise~~ is stored in compliance with ~~all~~the requirements of the ~~STP~~ Federal Facility Compliance Order (FFCO) ~~(40 CFR §§ 268.50(b) and (e))~~, and such storage is in compliance with the Site Treatment Plan (STP)." Lines 12-15: Suggest deleting this paragraph.
46	Part 2, Section 2.3.1	This condition omits an important provision 40 CFR §268.50(a)(2)(ii) making the requirement more stringent than and inconsistent with its existing rules. Suggested change clarifies that tanks can be labeled with accumulation dates or a record can be kept. LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	Page 20, Lines 18-20: Please change the sentence to read: "Further, the Permittees shall ensure that each tank at a permitted unit into which hazardous waste is placed is clearly marked to identify the date the period of accumulation began, or such information for each tank is recorded and maintained in the operating record at the hazardous waste management unit (40 CFR § 268.50(a)(2)(ii))."
47	Part 2, Section 2.3.3	The permit condition cites a generator requirement under 40 CFR §268.7(a)(7) and should not be applied to a treatment, storage or disposal facility (TSDF). The	Page 20, Lines 29-36: Please delete this section.

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		generator of the waste, not the TSDF, is required to determine if a waste it generates must be treated prior to land disposal. 40 CFR §268.7(a)(7) further provides that if a generator determines that he is managing a prohibited waste that is excluded from the definition of hazardous waste, he must place a one-time notice describing such generation. LANL is both a TSDF and a generator of hazardous waste. LANL must comply with all generator requirements when it generates a hazardous waste, including the requirements of 40 CFR §268.7(a)(7). LANL did not request this condition in its permit application, and the administrative record does not support the condition.	
48	Part 2, Section 2.4.1	While it appears that the condition at Page 21, lines 13-14, requires the Permittees to determine whether or not the waste is subject to land disposal restrictions, it can be construed to require that underlying hazardous constituents be identified for all waste stored or treated at permitted unit. Such analysis is not necessary to determine whether a waste is subject to land disposal restrictions. The change in language is proposed to clarify the requirement; it tracks the language of Section C.5.3 of the Waste Analysis Plan (Attachment C). The second suggested change is an editorial change suggested for clarity.	Page 21, Lines 13-14: Suggest revising the language to read: "2. ~~waste characteristics necessary to determine whether the waste~~ the characterization of all hazardous waste to determine whether it is prohibited from land disposal under 40 CFR Part 268." Page 21, Bullet 3, Line 18-19: Suggest 3rd bullet read: "waste characteristics necessary to prevent the mixing or placing of incompatible wastes in the same container (40 CFR §§264.17 and 264.177) or in a tank system (40 CFR §264.99) and to prevent the impairment of containers (40 CFR §264.172) and secondary containment systems for tanks by incompatible ~~by associated~~ wastes (40 CFR §264.19(c)(1))."
49	Part 2, Section 2.4.1	This permit condition requires documentation of all information regarding "*whether the waste has a radiological component*." As a permit condition, the failure to provide radiological information is a substantive requirement that would subject LANL to fines and penalties. NMED has no authority to regulate the radiological component of mixed waste under RCRA; the radiological component falls under the Atomic Energy Act of 1954 and is subject to DOE	Line 22, bullet 5 Suggest deleting "has a radiological component" and inserting "is a mixed waste."

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		orders. NMED's permit condition, however, can be broadly construed to impermissibly regulate mixed waste as a whole (i.e., the radiological component) as opposed to the hazardous component insofar as it requests Permittees to "obtain and document all information" on whether the waste has a radiological component. Further, LANL's waste analysis plan does not apply to the radiological component of the mixed waste, only the hazardous component of the waste. A hazardous waste that contains a radiological component is a "mixed waste." LANL would agree to provide information on whether the waste is a mixed waste (e.g., that it has a radiological component), but does not believe that NMED authority extends to requiring all information and documentation concerning the radiological component of mixed waste. The permit condition has been revised to address this concern.	
50	Part 2, Section 2.4.2	NMED rewrites the rule at 40 CFR §260.21 to add requirements beyond those in the rule. The regulation refers to the addition of methods to 40 CFR Parts 261 or 264, and is not limited to "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (SW-846). LANL did not request the additional requirements in its permit application, nor is there support for the additional requirements in the administrative record. Suggest incorporating this section by reference, or suggest making the changes indicated at right.	Pages 22 and 23: Throughout Section: Please replace references to SW-846 with methods in Parts 261 and 264. Page 22, line 7: add "<u>in accordance with the procedures of 40 CFR §260.21</u>" at the end of the sentence. Page 22, lines 34-36: Please delete the last sentence of the paragraph. Page 22, please delete line 37. Page 23, Line 5: Please delete.
51	Part 2, Section 2.4.2	The proposed permit condition provides that if Permittees use an independent contract laboratory to perform analysis, it must enter into a written contract with an independent contract laboratory and provide copies of any contracts in the Operating Record. NMED rules do not require a TSDF to contract out to independent laboratories or enter into such a contract which effectively regulates private business relations with laboratories by requiring written contracts to be	Page 22: Please strike lines 26 - 30.

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		signed with these businesses. The condition goes beyond NMED rules, is not supported in the administrative record, unreasonably interferes with business relationships, and is not based on a permit requirement of the HWA necessary to protect human health and the environment. Further, LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	
52	Part 2, Section 2.4.3	The proposed requirement is not found in NMED or EPA rules, the administrative record, and does not appear based in protection of human health and the environment. Waste characterization by sampling and analysis is sufficient without further additional data unless that data is necessary to the characterization (i.e. would be included). EPA waste analysis guidance requires that the use of AK be sufficient to identify the waste accurately and completely. The need for this requirement in order to resolve any potentially different sets of data seems to be addressed by the next sentence regarding resolution of data discrepancies. Further, LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record.	Page 23, Lines 18-20: Recommend revising the requirement to remove the text: "and include in the AK documentation all of the background information assembled and used in the characterization process whether or not the information supports the decision to use AK."
53	Part 2, Section 2.4.3	The proposed requirement is not found in NMED or EPA rules, the administrative record, and does not appear based in protection of human health and the environment. The condition exceeds the requirements for documentation and does not necessarily facilitate access by the Permittees. The suggested change preserves flexibility for the Permittees and addresses the HWB's concern.	Page 23, Line 22: Change "traceable identification number" within the sentence to read "<u>traceable identifier</u>".
54	Part 2, Section 2.4.4	The permit imposes a condition that LANL shall require a generator to provide all AK documentation used to characterize waste, citing omnibus authority.	Page 23, Lines 28-29: Change sentence to read: "If AK is used for the waste characterization,

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		The proposed requirement is not found in NMED or EPA rules, the administrative record, and does not appear based in protection of human health and the environment. Acceptable knowledge has been recognized by EPA and others as a waste characterization method to meet the requirements of 40 CFR §264.13. See U.S. EPA, Waste Analysis at Facilities That Generate, Treat, Store, and Dispose of Hazardous Wastes, EPA/530-SW-84-012 (1994). LANL recognizes that if it seeks to use AK documentation, that it should use best efforts to obtain the necessary documentation from generators. If LANL fails to do so, it also recognizes that it may not rely upon AK. LANL will use best efforts to obtain information from generators, but does not believe it should be held to meet a new requirement to do so not found in NMED rules.	the Permittees shall ~~require the~~request that the generator provide all AK documentation used to characterize the waste (40 CFR § 270.32(b)(2)).”
55	Part 2, Section 2.4.4	NMED rewrites the rule at 40 CFR §264.72(c) in a manner that omits the term “significant discrepancy” an important clause thus making the requirement more stringent than and inconsistent with its existing rules. Under NMED rules, “significant discrepancies” are defined at 40 CFR §264.72(a)(1) (e.g., bulk wastes with variations greater than 10% in weight). The suggested change makes the Permit consistent with this rule. Further, LANL’s permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	Pages 23-24, Lines 33-35 and 1-2: Please delete the following: “If discrepancies between the waste received and the information on the manifest are found, the Permittees shall notify the Department of the discrepancy within five days, and shall return the waste to the off-site generator within 90 days, unless the generator provides an acceptable resolution to the discrepancy within 90 days after receipt of the waste at the Facility.” and replace with: “If significant discrepancies between the waste received and the information on the manifest are found, the Permittee must attempt to reconcile the discrepancy with the waste generator or transporter. If the discrepancy is not resolved within 15 days after receiving the waste, the Permittee must immediately submit to the Department a letter describing the discrepancy and attempts to reconcile it, and a copy of the manifest or shipping paper at issue.”
56	Part 2, Section 2.4.6	The proposed requirement is not found in NMED or EPA rules, the administrative record, and does not appear based in protection of human health and the environment. The Permittees environmental impacts analysis for the open burning treatment units was	Page 24, Lines 12-15: Please clarify the sentence that reads: “The Permittees shall sufficiently analyze any waste which has not been previously treated in the thermal process (open burning) to establish appropriate operating conditions

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		designed to estimate air emissions based on all of the types of waste that have been accepted at the open burning units, not on individual waste types that are accepted at each unit. Any new waste type that could be added for acceptance at one of the open burning units would be covered through the environmental impacts analysis already conducted for the TA-16 Burn Ground and therefore a separate analysis should not be required. LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record.	(including waste quantity and auxiliary fuel feed) and to determine the type of pollutants which might be emitted (40 CFR § 270.32(b))." to read: "The Permittees shall evaluate any waste type which has not been previously treated in the thermal process (open burning) to establish that general unit operating conditions (including auxiliary fuel feed) are sufficient and that the type of pollutants that may be emitted have been evaluated (40 CFR § 270.32(b)(2)).."
57	Part 2, Section 2.4.6	The proposed requirement is not found in NMED or EPA rules, the administrative record, and does not appear based in protection of human health and the environment. Heating values, emission factors, and halogen and sulfur contents that were part of the Permittees environmental impacts analysis for the open burning treatment units were not measured for current waste types, but were obtained from published sources of information for wastes that were as similar as possible to the waste burned at TA-16. None of the actual waste burned at the open burning units have been measured for these parameters at the units. Further, actual measurement for heating values or emissions factors is not a capability that exists at LANL.	Page 24, Lines 16-18: Please clarify that the heating value, emission factors, and halogen and sulfur content of the new waste type will be obtained from published sources of information for wastes that are similar to the waste to be treated.
58	Part 2, Section 2.4.7	LANL is concerned that current language could be read to require verification more frequently than annually. Additionally, the term regenerated is undefined and it is not clear how this applies to the annual recharacterization requirement.	Page 24, Lines 26-27, Bullet #1: Please change the bullet to read: "At a minimum, annually re-characterize all regenerated hazardous waste streams managed under this Permit to verify the accuracy of initial and subsequent characterization results. Hazardous waste stream annual recharacterization shall be required one calendar year from the date of initial characterization of the regenerated hazardous waste stream and one calendar year from the last annual recharacterization, as applicable;"

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59	Part 2, Section 2.4.7	Subparagraph 2: The regulations require reanalysis, which may include acceptable knowledge, when the process generating the waste has or may have changed. 40 CFR §264.13(a)(3)(1). The regulations do not require re-characterization when listed status of the waste stream changes or when Land Disposal Restrictions (LDR) status of the waste changes. LANL did not request this language in its permit application, nor is there support for it in the administrative record. Suggested change is consistent with 40 CFR §264.13(a)(3)(1).	Page 24, Lines 28-30, Bullet #2: Please change the bullet to read: " re-characterize hazardous wastes managed under this Permit whenever there is a change in either the waste-generating process~~es that may affect the physical or chemical properties, the listed status of the waste stream, or the LDR status of the waste~~ or when analytical results indicate a change in a waste stream;"
60	Part 2, Section 2.4.7	The proposed change is to clarify the meaning of the paragraph. See LANL's proposed definition of waste stream in section 1.8. The remaining sentences within the bullet make clear that wastes are counted by waste stream.	Page 25, Lines 3-6, Bullet #3: Please remove the text: "To count wastes within a year, each waste material generated from a single process and distinguishable from other waste material by input materials, physical form, hazardous constituents, EPA Hazardous Waste Numbers, and LDR status, shall be counted as a single unique waste stream."
61	Part 2, Section 2.4.7	The proposed condition applies to mixed transuranic (TRU) waste, rather than mixed waste. The condition as applied in this sentence should apply to mixed wastes, and not just TRU mixed waste. This is also consistent with language in the LANL permit application and the Waste Analysis Plan (Attachment C).	Page 25, Line 10, Bullet #3: Please change "mixed TRU wastes" to read "mixed waste".
62	Part 2, Section 2.4.7	The permit condition adds a 24 hour notice requirement which is not included in the applicable regulation at 40 CFR §264.13(a)(3)(ii). In addition, resolution of manifest discrepancies are addressed in 40 CFR §264.72 which requires notice for "significant discrepancies," defined in that section, and require written notice to the Department after 15 days if the discrepancy has not been resolved. The suggested change makes the Permit consistent with these rules. Further, LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA	Page 25, Lines 16-17: Please delete the following language from bullet 4: "The Permittees shall notify the Department in writing within 24 hours of their receipt of such a discrepancy notice from a receiving facility." Or, if a notice provision is included in bullet 4, include the notice requirement from 40 CFR §264.72(b).

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		1978, 74-4-4D).	
63	Part 2, Section 2.4.8	This permit condition omits applicable exemptions found in 40 CFR §§264.1, 264.1080(b), and 264.1082 thus making the requirement more stringent than and inconsistent with its existing rules. The permit condition provides an incomplete list of exemptions from the requirement to control air pollutant emissions from a tank or container as specified in NMED rules at §§264.1080(b)(1) -(b)(8), 264.1, and 264.1082. To be consistent with NMED rules, suggest incorporating these exemptions or add the additional circumstances described. Further, LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	Page 25, Lines 30-35: Please either incorporate the following language by reference or add the correct exemptions. LANL suggests incorporating by reference to reduce the length of the Permit. The requirement to control air pollutant emissions from a container or tank at 40 CFR Part 264, Subpart CC applies to all containers and tanks at Permitted Units identified in this permit, except as provided for in 40 CFR §§264.1, 264.1080(b), and 264.1082. Or Add the following exemptions: "3. a container or tank managing hazardous waste with an average volatile organic constituent content that is less than 500 ppmw at the point of waste generation; 4. a container or tank that received hazardous waste before December 6, 1996, and to which no hazardous waste was added on or after this date; 5. a tank which has stopped receiving hazardous waste and is undergoing closure; 6. a container or tank that is certified to be equipped with and using air emission controls that meet the applicable CAA regulations at 40 C.F.R. part 60, part 61, or part 63 (except tanks being controlled through the use of an enclosure rather than a cover); 7. a tank that meets the waste water exemption; 8. a container or tank that is used for emergency or spill management; 9. a container or tank that is located in a totally enclosed treatment facility; 10. a tank with process vents; or 11. a container or tank that is used solely for on-site treatment or storage of hazardous waste as part of remediation activities required by RCRA, CERCLA or other federal or state laws."

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64	Part 2, Section 2.4.9	The proposed requirements within this section are not found in NMED or EPA rules, the administrative record, and do not appear based in protection of human health and the environment. The conditions are too stringent in that not all hazardous wastes are subject to LDR (40 CFR §268.1) and it precludes the use of AK to make relevant determinations (40 CFR §264.13(a)(2)). In addition, lines 2 through 5 mandate increased analysis and reporting, at substantial expense, above that required to comply with the regulations. LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	Page 26, Lines 2-19: Change section to read: "The Permittees shall characterize treatment-derived wastes by determining whether the waste is a hazardous or mixed waste in compliance with the requirements of Permit Condition 2.4.1 of this Part (2) and in compliance with the notification and record-keeping requirements specified in 40 CFR § 268.7(b)(3)(ii), Treatment Facility Paperwork Requirements Table, Requirement 1. Specifically, the Permittees shall characterize treatment-derived wastes, including wastes that are formerly characteristic and thus are no longer hazardous or mixed waste, to determine whether the waste meets the applicable LDR treatment standards specified at 40 CFR §§ 268.40, 268.45, 268.48, and 268.49, in compliance with 40 CFR § 268.7(b). Pursuant to 40 CFR § 268.7(b)(3)(ii), the Permittees shall characterize treatment-derived waste to determine the presence of any of the constituents of concern for hazardous waste codes F001 through F005 and F039, and the presence of underlying hazardous constituents in characteristic wastes as defined at 40 CFR § 268.2(i)." from: "When using laboratory analysis as part of a hazardous waste characterization, the Permittees shall require the laboratory to report concentrations of all hazardous constituents listed at 40 CFR § 268.48, *Table of Universal Treatment Standards*, that the analytical test method used is capable of measuring (40 CFR § 270.32(b)). When performing or obtaining laboratory analysis to demonstrate that a waste meets its applicable LDR treatment standard concentrations specified in 40 CFR § 268.40, *Treatment Standards for Hazardous Wastes*, in compliance with 40 CFR § 268.7(a) and (b), the Permittees shall ensure that analytical method practical quantification limits are not higher than the applicable treatment standard (40 CFR § 270.32(b)). The Permittees shall characterize treatment-derived wastes, including wastes that have been treated so that they and are no longer characteristic hazardous waste, to determine whether the waste meets the applicable LDR treatment standards specified at 40 CFR §§ 268.40, 268.45, 268.48, and 268.49 (40 CFR § 268.7(b)), unless the Permittees

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			have documented that the purpose of the treatment process is not to attain the applicable treatment standard. The Permittees shall characterize treatment-derived wastes to determine the presence of any of the constituents of concern for hazardous waste codes F001 through F005 and F039 and underlying hazardous constituents in characteristic wastes as defined at 40 CFR § 268.2 unless the waste will be treated and monitored off-site for all constituents (40 CFR § 268.7(b)(3)(ii)). The Permittees shall document in the Facility Operating Record such off-site treatment and monitoring (40 CFR § 270.32(b)).”
65	Part 2, Section 2.4.10	The proposed requirement is not found in NMED or EPA rules, the administrative record, and is not protective of human health and the environment. The condition exceeds the regulatory requirement for documentation and does not necessarily facilitate access by the Permittees. The suggested clarification requested covers documentation that has already been archived using a different method and preserves flexibility for the Permittees and addresses the HWB’s concern.	Page 26, Lines 22-25: Change sentence to read: “For new records that contain waste characterization information but are required to be archived elsewhere at the Facility, such as laboratory record books, the Permittees shall assign a traceable ~~identification number~~identifier to this documentation to facilitate access to this information by the Permittees and Department (40 CFR § 270.32(b)(2)).”
66	Part 2, Section 2.4.10	The proposed requirement is not found in NMED or EPA rules, the administrative record, and is not protective of human health and the environment. Proposed change clarifies that this Permit does not apply to hazardous waste generators and does not change the applicability of the condition.	Page 26, Lines 25-27: Change the last sentence of the paragraph to read: “Facility ~~generators~~ shall maintain ~~this~~ waste characterization documentation in accordance with the record retention requirements specified for the Facility Operating Record.”
67	Part 2, Section 2.5	NMED rewrites the rule at 40 CFR §264.14(b) in a manner that omits an important clause thus making the requirement more stringent than and inconsistent with its existing rules. The suggested change makes the Permit consistent with this rule. Further, LANL’s permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	Page 26, Lines 37-38: Add “or” after “Facility;”
68	Part 2, Section 2.5.1	NMED rules require warning signs, including bilingual, to be posted at each entrance to the active portion of a facility to ensure that non-English speaking members of	Page 27, Lines 10-12: Please change the text to read: "The Permittees shall post bilingual

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		the surrounding community are warned. The proposed permit condition however can be misconstrued to require postings on all fences at the laboratory including fences that are within controlled access areas, LANL suggests revisions to clarify the intent of this requirement. Perimeter fences are not present at all hazardous waste management units at LANL, however, warning signs are posted at all entrances and the security for each unit is ensured as described in the permit application documentation.	warning signs (in English and Spanish) at all gates and perimeter fences, where present, around permitted units at the Facility (40 CFR § 264.14(c))."
69	Part 2, Section 2.5.1	No permitted units share boundaries with Santa Clara Pueblo; suggest removing this language because this is a permit condition that is not applicable.	Page 27, Lines 18-19: Suggest removing "and the Santa Clara Pueblo (Kha̓-Po)"
70	Part 2, Section 2.6	See comment on Part 1, Section 1.8, definition of "hazardous constituent" and "hazardous waste constituent." Suggested change makes permit condition consistent with the regulations at 40 CFR §264.15(a)(1), and is also consistent with rule definition of hazardous waste constituent at 40 CFR §260.10.	Page 27, Line 22: Please insert the word "waste" after "a release of hazardous" so that section 2.6, 1) reads "a release of hazardous waste constituents to the environment".
71	Part 2, Section 2.6	There is a typographical error on this line.	Page 27, Line 23: Change "heath" to "health".
72	Part 2, Section 2.6.1	The draft Permit requires inspection at least weekly of all equipment listed in lines 3-5 "in compliance with the inspection schedules contained in Attachment E…" However, inspection frequencies for equipment varies and is not all weekly. For example, Attachment E provides for annual assessment of a tank system that does not have secondary containment. Suggest removal of the term "at least weekly" to be consistent with Attachment E. The inspection schedules in Attachment E provide for all other inspections on a daily, weekly, or monthly basis, so the change does not affect the stringency of the inspection schedule.	Page 28, Line 5: Please delete "at least once a week," from the sentence which currently reads "The Permittees shall inspect permitted units at the Facility, including any containers, monitoring equipment, safety and emergency equipment, security devices and operating and structural equipment, at least once a week, in compliance with the inspection schedules contained in Attachment E (*Inspection Plan*)."
73	Part 2, Section	NMED rewrites the rule at 40 CFR §264.15(c),	Page 28, Lines 12-13:

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	2.6.2	inserting a 24-hour response period which is more stringent than and inconsistent with its existing rules. In addition, as the rule suggests, the appropriate response time may vary with the deterioration or malfunction. The suggested change makes the Permit consistent with this rule. Further, LANL's permit application did not suggest this more stringent permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	Please replace sentence stating "The Permittees shall remedy such deterioration or malfunction within 24 hours of the discovery of the problematic situation" with: "<u>The Permittees shall remedy such deterioration or malfunction of equipment or structures which the inspection reveals on a schedule which ensures that the problem does not lead to an environmental or human health hazard</u>."
74	Part 2, Section 2.6.2	NMED rewrites the rule at 40 CFR §264.171, inserting a 24-hour response period and thus making the requirement more stringent than and inconsistent with its existing rules. The suggested change makes the Permit consistent with this rule. Further, LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	Page 28, Lines 15-17: Sentence currently reads: "If a container holding hazardous waste is not in good condition (e.g., severe rust, apparent structural defects, leaks) the Permittees shall transfer the waste to a container that is in good condition within 24 hours of discovery of the problematic situation." Please change this sentence as follows: "<u>If a container holding hazardous waste is not in good condition (e.g., severe rusting, apparent structural defects) or if it begins to leak, the Permittees shall transfer the hazardous waste from this container to a container in good condition or manage the waste in another way that complies with the requirements of 40 CFR § 264.171</u>."
75	Part 2, Section 2.6.3	The proposed requirement to approve LANL inspection forms is not found in NMED or EPA rules, the administrative record, and is not protective of human health and the environment. Currently changes to this form are a class 1 permit modification, this permit condition effectively changes the permit modification classification to a class 1*. Changes to the form are administrative and informational as described in Appendix I to 40 CFR §270.42. Any update of the form would not change the frequency or content of the inspections conducted.	Page 28, Lines 20-21: Suggest deleting the phrase "approved by the Department."
76	Part 2, Section 2.6.3	The requirement to cross out, initial and date inspection forms as proposed is not found in NMED or EPA rules, the administrative record, and is not protective of human health and the environment. This suggested	Page 28, Lines 25-27: Please change sentence to read: "The Permittees shall ensure that these records are clearly legible, all handwritten information is in ink, and

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		change does not alter the applicability of the condition but allows for multiple methods of correction of the record.	any errors are ~~crossed out with one line and initialed and dated by the inspector making the correction~~clearly marked and corrected."
77	Part 2, Section 2.6.3	NMED rewrites the rule at 40 CFR §264.15(d) to add a requirement to maintain unalterable electronic copies of inspection logs in the Facility Operating Record until approval of closure or post-closure certification for each unit. This change makes the requirement more stringent than and inconsistent with its existing rules. The suggested change makes the Permit consistent with this rule. Further, LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	Page 29, lines 7-10: Please delete the sentence: "The Permittees shall maintain unalterable electronic copies of inspection logs in the Facility Operating Record until closure or post-closure certification is approved for a particular permitted unit as specified in Permit Section 2.12.2."
78	Part 2, Section 2.8	NMED rewrites the rule at 40 CFR §264.176 to prohibit storage of containers holding ignitable or reactive waste within 50 feet of a TA boundary. This change makes the requirement more stringent than and inconsistent with its existing rules. The suggested change makes the Permit consistent with this rule. Further, LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	Page 29, Lines 23-25: Please replace he following sentence: "The Permittees shall ensure that containers holding ignitable or reactive wastes are located at least 15 meters (50 feet) from the facility boundary defined as the TA-specific boundary identified in Figure 2-8 (40 CFR §§264.176 and 270.32(b))", with: "The Permittees shall ensure that containers holding ignitable or reactive wastes are located at least 15 meters (50 feet) from the Facility property line identified in Figure 2-8 (40 CFR § 264.176)."
79	Part 2, Section 2.8	Suggested change corrects a typographical error.	Page 29, line 27-28: Please change #3 to read: "3) the mixing of incompatible ~~of~~ wastes and other materials, to prevent reactions that could lead to or cause the following:"
80	Part 2, Section 2.8	Suggested change corrects a typographical error.	Page 29, Line 29: Remove the word "that".
81	Part 2, Section 2.8	Suggested change clarifies that the use of non-sparking tools is required when management of ignitable or reactive waste is occurring.	Page 30, Line 11, Bullet #4: Please change bullet to read: "use only non-sparking tools when managing hazardous waste containers that contain ignitable or reactive

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			waste;"
82	Part 2, Section 2.8	The proposed requirement to ensure that lightning rods are attached to all storage or treatment units, is not found in NMED or EPA rules, the administrative record, and is not protective of human health and the environment. There is no regulatory requirement to have a lightning rod at hazardous waste storage and treatment units. LANL did not ask for this condition in its permit application.	Page 30, Line 12, Bullet #5: Please remove this bullet.
83	Part 2, Section 2.9	Suggested change corrects an error. LANL has a waste minimization and pollution prevention program in place.	Page 31, Line 9: Replace "institute" with "maintain".
84	Part 2, Section 2.9	LANL's waste minimization program addresses a program intended to reduce the toxicity of hazardous waste generated to the degree determined to be economically practicable; the proposed method of treatment, storage, disposal practical and currently available to minimize present and future threat to human health and the environment. The program continually identified potential for reducing quantities and toxicity of priority waste streams. The HWB has proposed additional elements for a waste minimization program not required by its rules, and that should not be included in this Permit. DOE and LANS are required to certify that they have a program in place that meet s the requirements of 40 CFR §264.73(b)(9), but not a program that includes the additional elements 1-9.	Page 31, Lines 15-35, Bullets 1-9: Please delete items 1-9 and revise as follows: "The Permittees are required to certify annually that a waste minimization program is in place to reduce the toxicity of hazardous waste generated to the degree determined to be economically practicable; and the proposed method of treatment, storage, disposal is that practical and currently available to minimize present and future threat to human health and the environment, as required by 40 CFR §264.73(b)(9))."
85		LANL's waste minimization program addresses a program intended to reduce the toxicity of hazardous waste generated to the degree determined to be economically practicable; the proposed method of treatment, storage, disposal practical and currently available to minimize present and future threat to human health and the environment. The program continually identified potential for reducing quantities and toxicity of priority waste streams. The HWB has	Page 32, Lines 1-2: Change the text to: "The Permittees shall submit to the Department ~~a certified report regarding the waste minimization program annually~~ by December 1st a certification as required by 40 CFR §264.73(b)(9)~~for the year ending the previous September 30th~~."

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		proposed additional elements for a waste minimization program not required by its rules, and that should not be included in this Permit. DOE and LANS are required to certify that they have a program in place that meet s the requirements of 40 CFR §264.73(b)(9), but not a program that includes the additional elements 1-9.	
86	Part 2, Section 2.10	NMED rewrites the rule at 40 CFR §264.31 in a manner that omits an important clause thus making the requirement more stringent than and inconsistent with its existing rules. The suggested change makes the Permit consistent with this rule to clarify that the condition applies only to the hazardous waste management unit rather than the entire LANL facility. Further, LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	Page 32, Lines 4-7: Please change sentence to read: "The Permittees shall maintain and operate the hazardous waste management units ~~Facility~~ in a manner that minimizes the possibility of fire, explosion or any unplanned sudden or non-sudden release of hazardous wastes or hazardous waste constituents to the air, soil, or surface water that could threaten human health or the environment (40 CFR §264.31)."
87	Part 2, Section 2.10.1	The regulations do not address the specific contents of spill kits; and it is not appropriate to do so as the content will depend on the type of waste stored at each unit. The requested change requires units to have appropriate spill kits for the materials stored at each unit and references the Contingency Plan (Attachment D) of this permit where the content and location of spill kits at each unit is located.	Page 32: Line 27: delete "acidic, caustic, flammable, and otherwise" Line 28: suggest modifying sentence ending on line 30 to read "These kits shall include~~, at a minimum, sorbents, neutralizers, shovels, empty containers, and all appropriate personal protective equipment~~ materials and equipment as described in Attachment D (Contingency Plan) for each permitted unit."
88	Part 2, Section 2.10.1	Suggested change corrects a typographical error.	Page 32, Lines 32-33: Change the citation to "(40 CFR § 264.32(d))".
89	Part 2, Section 2.10.1	The condition to maintain equipment at all permitted units capable of mitigating the effects of a power outage omits regulatory language that enables Permittees to address a power outage with "procedures, structures, or equipment" in accordance with 40 CFR §270.14(8)(b). The permit applications included the use of evacuation procedures and performance testing of safety equipment when re-entering the facility.	Page 32-33, Lines 36-37 and 1-4: Modify the paragraph to read: "The Permittees shall maintain procedures, structures, or equipment at all permitted units capable of mitigating the effects of a power outage (40 CFR § 270.14(b)(8)(iv))." Delete the remainder of the paragraph.

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		LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	
90	Part 2, Section 2.10.2	The conditions requiring LANL to immediately provide substitute equipment, or notify facility employees and contractors of the presence of substitute communication equipment, alarm system or fire protection component, spill control or decontamination equipment and to train personnel to the substitute equipment are requirements not found in the rule. Instead, NMED's rules require a TSDF to be equipped with the identified equipment. LANL's suggested language is consistent with NMED rules, with Section E.1.3 of Attachment E (Inspection Plan) to the draft Permit, and allows LANL to make necessary and simple repairs and equipment replacements to protect human health and the environment without the additional burden and unnecessary delay associated with the proposed requirement. The requirement that Permittees "ensure that malfunctioning equipment is clearly marked… and that the location of the substitute equipment is clearly posted…" is not found in NMED rules, and appears to attempt to regulate malfunctioning equipment. If equipment malfunctions, LANL is required to replace or repair the equipment. Further, LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	Page 33, Lines 13-18: The second paragraph of this section should read: "<u>If testing identifies any nonfunctioning communication equipment, alarm system or fire protection component, spill control, or decontamination equipment, the Permittees shall ensure it is promptly repaired or replaced (40 CFR §§ 264.32 and 264.33).</u>" from: "If testing identifies any nonfunctioning communication equipment, alarm system or fire protection component, spill control, or decontamination equipment, the Permittees shall ensure it is promptly repaired; they shall immediately provide substitute equipment or systems during repairs. The Permittees shall ensure that Facility employees and contractors are notified of the presence of substitute equipment and, if necessary, provide them with proper training of its use (40 CFR § 270.32(b)). The Permittees shall ensure that malfunctioning equipment is clearly marked as "Out of Use" and that the location of the substitute equipment is clearly posted on or adjacent to the faulty equipment (40 CFR §§ 264.31 and 270.32(b))."
91	Part 2, Section 2.10.3	The proposed requirement that emergency communication devices be accessible without personnel having to enter another building is not part of the rules or the administrative record, is unreasonably restrictive, and does not appear based in protection of human health and the environment. Communication equipment	Page 33, Lines 22-24 and 30-31: Please delete the words from lines 23-24: "without personnel having to enter another building". And Please delete the sentence at lines 27-31: "The Permittees shall ensure

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		may be located inside a control building/bunker for some LANL hazardous waste management units; and buildings must be entered from the outdoor unit. Further, LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D). The suggested changes incorporate regulatory requirements from 40 CFR §264.34(b).	that the communication device is accessible without the employee having to enter another building."
92	Part 2, Section 2.10.3	The proposed requirement to consider waste management to be occurring is not part of NMED rules and is not protective of human health and the environment. Under RCRA and NMED's rules at 40 CFR §260.10, hazardous waste management is defined to be the systematic control of the collection, source separation, storage, transportation, processing, treatment, recovery, and disposal of hazardous waste. Further, LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	Page 33, Lines 24-26: Please change the sentence to read: "The Department will consider waste management to be occurring whenever a Hazardous/Mixed Waste Worker as defined in Attachment F (*Training Plan*)~~person~~ is located at a permitted unit and the unit contains hazardous waste."
93	Part 2, Section 2.11.1	The condition requiring implementation of the contingency plan whenever there is a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous constituents omits a portion of the rule at 40 CFR §264.51(b), making the requirement more stringent than and inconsistent with the existing rules. The rule requires implementation of the Contingency Plan for any release of hazardous waste or hazardous waste constituents that may threaten human health and the environment. The suggested change makes the Permit consistent with this rule. Further, LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	Page 34, Lines 13-15: Please change sentence to read: "The Permittees shall immediately implement Attachment D (*Contingency Plan*) whenever there is a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents which could threaten human health and the environment (40 CFR § 264.51(b))."
94	Part 2, Section	Suggested revision clarifies that the condition only	Page 34, Lines 20-21, Bullet 1.a.:

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	2.11.1	applies to the hazardous waste management unit.	Please change bullet to read: "if a hazardous waste spill cannot be contained with secondary containment or application of sorbents within the hazardous waste management unit;"
95	Part 2, Section 2.11.1	Suggested revision clarifies that the condition only applies to the hazardous waste management unit.	Page 35, Lines 1-2, Bullet 3.b.: Please change bullet to read: "if any building, grass, forest, or non-hazardous waste fire exists that threatens to volatilize or ignite hazardous waste at a hazardous waste management unit."
96	Part 2, Section 2.11.2	Suggested revision is consistent with the rule at 40 CFR §264.52(a) and the Contingency Plan (Attachment D).	Page 35, Lines 6-8, Bullet #1: Please replace "hazardous constituent" with "hazardous waste constituent" so the sentence reads: "a description of the actions Facility personnel shall take to respond to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, and/or surface water at the Facility;"
97	Part 2, Section 2.11.2	The requirement to name individuals assigned to act as Emergency Coordinators with contact numbers is consistent with the regulatory requirements but is not the most efficient way to implement emergency response at LANL which has a Central Alarm System (CAS) with a dispatcher(s) on duty 24 hours a day, 7 days a week, 365 days a year. The dispatcher contacts the emergency response organization, which responds to all emergencies arising at LANL. The organization includes certified Incident Commanders who are on-call on a rotation known to the CAS dispatcher. The Incident Commander has the authority to summon the needed expertise. LANL requests a change in condition to incorporate into the Permit the information needed to most efficiently trigger emergency response at the facility.	Page 35, Lines 14-15: Please change the bullet 4 to read: "the names and phone numbers (i.e., office, home, cell, pager) of a primary and alternate individuals assigned to act as the Emergency Coordinator; or the emergency number(s) that notify the on-call Incident Commander and initiate the emergency response at LANL."
98	Part 2, Section 2.11.3	The conditions in this section on the dissemination of the Contingency Plan within the facility substantially expand the requirements of 40 CFR §264.53, thus making the requirement more stringent than and inconsistent with its existing rules. The regulation	Page 35, Lines 24-33 and Page 36, Lines 1-2: Please replace the current language with the following: "A copy of the contingency plan and all revisions to the plan must be: (a) maintained at the facility; and (b) submitted to the Los Alamos Police and Fire Departments, the Los Alamos County Hospital, and State and local

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		requires that a copy of the Contingency Plan be maintained at the facility, which the draft Permit defines as the 40 square mile site, each permitted unit, and be submitted to local police and fire departments, hospitals, and state and local emergency response teams that may be called upon to provide emergency services. It is not necessary to maintain all amendments to the contingency plan at each permitted unit. The suggested change makes the Permit consistent with this rule and LANL's permit application. The Department will have a copy of the plan and any modifications in the Permit. Further, LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	emergency response teams that may be called upon to provide emergency services." Also, please delete bullets 1, 2, 3, and 5.
99	Part 2, Section 2.11.3	The proposed condition requiring controlled distribution of the contingency plan "to all parties or agencies referenced in the plan, or who rely upon the plan" within five days of receipt of any modification, and requiring distribution through certified mail conflicts with the rule at 40 CFR §264.53, which does not require such distribution or mandate the method or schedule of distribution. The suggested language is consistent with NMED rules and LANL's permit application, which identifies personnel who will distribute controlled copies of the plan to responders as described in Attachment E (Contingency Plan) of the permit application. LANL's permit application suggested a narrower condition, and no support could be found for the expanded condition in the administrative record (see also NMSA 1978, 74-4-4D).	Page 36, Lines 3-9: Please replace lines 3-8 that read: "Distribution of the Contingency Plan shall be controlled by a system that ensures that all parties or agencies referenced in the Plan, or who rely upon the Plan, receive current copies of the Plan within five days of the effective date of this Permit and within five days of receipt of any Department approval to a modification of the Plan. The Permittees shall ensure that all copies of the Contingency Plan distributed outside the Facility are sent by certified mail with a return receipt, or by an equivalent method, demonstrating proper distribution." with the following: "<u>LANL will provide controlled copies of the Contingency Plan to the Los Alamos Police and Fire Departments and the Los Alamos County Hospital, and State and local emergency response teams that may be called upon to provide emergency services</u>."
100	Part 2, Section 2.11.3	The requirement to maintain in the Facility Operating record documentation of the distribution of the Contingency Plan is not required by the rules at 40 CFR §§264.53 or 264.73. This condition was not part of LANL's permit application, nor is there support for it in the administrative record. This condition does not	Page 36, Lines 8-9. Please remove the following language: "A record of compliance with this requirement shall be maintained in the Facility Operating Record (40 CFR §270.32(b))."

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		provide additional protection for human health or the environment. Suggest deleting this requirement to be consistent with the regulations and LANL's permit application.	
101	Part 2, Section 2.11.3	The condition requiring that evacuation routes identified in the Contingency Plan be posted at principal entrances to all permitted units and buildings within those units rewrites the rule at 40 CFR §264.52(f) making the requirement more stringent than and inconsistent with its existing rules. It also contains the undefined term "principal entrances," leaving the condition open to misinterpretation. The suggested change makes the Permit consistent with this rule. LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	Page 36, Line 10-12: Please replace lines 10-12 that read: "The Permittees shall ensure that evacuation routes identified in the Contingency Plan are visibly and prominently posted at the principle entrances to all permitted units and buildings within those units (40 CFR § 270.32(b))." with the following: "<u>The plan must include an evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan must describe signal(s) to be used to begin evacuation, evacuation routes, and alternative evacuation routes (in cases where the primary routes could be blocked by releases of hazardous waste or fires).</u>"
102	Part 2, Section 2.11.4	The conditions included in this section describing the situations that trigger review and/or amendment of the contingency plan rewrite the rule at 40 CFR §264.54 and add substantial requirements not found in the rule or the permit application. No support could be found for the additional requirements in the administrative record, and the conditions cite to documents that are not subject to this permit and from which the contingency plan is independent. The proposed language is consistent with 40 CFR §264.54.	Page 36, Lines 14-28: Please replace the language that reads: "Pursuant to 40 CFR § 264.54, the Permittees shall review the Contingency Plan and amend the Plan, if necessary, whenever: 1. this Permit is revised; 2. the LANL Emergency Management Plan is revised; 3. the Los Alamos County Emergency Management Plan is revised and that revision is contrary to a requirement in the Contingency Plan; 4. a Building Emergency Plan (BEP) for a building which houses a permitted unit is changed and that change is contrary to a requirement in the Contingency Plan; 5. the Contingency Plan fails during a drill or an emergency; 6. the Permittees modify the Facility in either its design, construction, operation, maintenance, or other circumstances in a manner that increases the potential for fires, explosions, or releases of hazardous wastes or hazardous waste constituents; 7. the permitted unit design or operation changes the response necessary in an emergency; 8. the Permittees modify the list of Emergency Coordinators; or

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			9. the Permittees modify the list of emergency response equipment." with the following: "The contingency plan must be reviewed, and immediately amended, if necessary, whenever: (a) The facility permit is revised; (b) The plan fails in an emergency; (c) The facility changes – in its design, construction, operation, maintenance, or other circumstances – in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency; (d) The list of emergency coordinators changes; or (e) The list of emergency equipment changes."
103	Part 2, Section 2.11.4	The proposed requirement to ensure that appropriate personnel review the Contingency Plan at a minimum annually and log each review in the Facility Operating Record is not found in NMED or EPA rules, the administrative record, and does not appear based in protection of human health and the environment. Further, LANL's permit application did not suggest this permit condition (see also NMSA 1978, 74-4-4D). This condition is appropriately addressed in personnel training; see Attachment F for the scope of personnel training.	Page 37, Lines 1-2: Delete the following text: "The Permittees shall ensure that appropriate personnel review the Contingency Plan, at a minimum annually, and log each review in the Facility Operating Record (40 CFR § 270.32(b))."
104	Part 2, Section 2.11.5	Suggested change clarifies the terms used within the Contingency Plan (Attachment D) and within the RCRA regulations.	Page 37, Lines 4-9: Please change text to read: "The Permittees shall designate a Duty Emergency Manager or Incident Commander equivalent to the Emergency Coordinator (40 CFR § 264.55) who shall be responsible for coordinating all emergency response measures related to the management of hazardous wastes. A Duty Emergency ~~Coordinator~~ Manager shall be on call at all times at 911 or (505) 667-6211 and~~.~~ ~~The Duty Emergency Coordinator~~ shall be ~~thoroughly~~ familiar with the Contingency Plan and shall have the authority to promptly commit

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			the personnel and financial resources needed to implement the Contingency Plan (40 CFR § 264.55)."
105	Part 2, Section 2.11.6.1	Suggested change clarifies the condition that is included within LANL's permit application. Suggested change allows for all employees to activate communications systems if necessary.	Page 37, Lines 12-14: Please change text to read: "In the event of an imminent or actual emergency situation, ~~the Group Leader~~ personnel shall immediately activate the internal facility alarm or communication systems to notify all potentially affected facility personnel."
106	Part 2, Section 2.11.6.1	The requirement that the Group Leader (or "personnel" as suggested in comment above) should notify appropriate responders conflicts with the rule at 40 CFR §264.56 and with LANL's Contingency Plan. It imposes responsibilities on Group Leaders (or personnel) that are allocated to the Emergency Coordinator or Incident Commander. The proposed language clarifies the emergency coordinator role and is consist with the Contingency Plan (Attachment D) and the rule.	Page 37, Line 14-16: Please change text to read: "~~This person shall also notify~~ The Emergency Coordinator will ensure that the appropriate federal, tribal, state, and local agencies with designated response roles are notified and the other requirements specified in 40 CFR § 264.56 and the Contingency Plan are implemented~~and implement the other requirements specified in 40 CFR § 264.56~~."
107	Part 2, Section 2.11.8	The requirements of this section are not supported by NMED rules insofar as they suggest that an operational spill should be addressed under corrective action. This condition conflicts with Sections E.3 and E.4 of the Contingency Plan in LANL's permit application and several sections of the draft Contingency Plan (Attachment D, Sections D.4 and D.10). In addition, any release from an operating unit should be addressed immediately. Deferring cleanup of operational spills to corrective action would delay cleanup and is not protective of human health or the environment. There is no support for this condition in the rules or the administrative record.	Page 39, Lines 1-5: Please delete the section in its entirety.
108	Part 2, Section 2.11.9	Suggested change is consistent with comments made to section 1.9.12.	Page 39, Lines 7-9: Please incorporate the notice and reporting requirements from § 264.56(i) and (h) verbatim or by reference. Please change the text to read: "After implementation of the

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			Contingency Plan in response to a release of a hazardous waste or hazardous waste constituent, the Permittees shall notify the Department in compliance with Permit Section 1.9.12.”
109	Part 2, Section 2.11.9	The proposed rule addressing notice and record keeping requirements is potentially conflicting with NMED’s own rules in several respects. NMED rules on reporting for contingency plan incidents are clearly identified and easy to implement for regulated entities. NMED rules, at 40 CFR §264.56, require notice to the NMED, local, and other appropriate state authorities that it has complied with 40 CFR §265.56(h) before operations begin. The content of the notice is a report to be provided within 15 days and is spelled out under 40 CFR §264.56(j), as is the requirement that a report be filed in the operating record. Contingency plan incidents must be orally reported within 24 hours, with 15 days provided to file a written report after investigation of the incident. The proposed requirement, however, does not comport with NMED rules and is difficult to understand. First, the permit requires LANL to provide notice to the Department that it is in compliance with Section 2.11.7 a notice that could not by definition occur within 24 hours after the incident, but only after compliance with the cleanup requirements of 40 CFR §264.56(h). Second, the 24 hour notice requirements of Section 1.9.12.1 for instances of noncompliance contain a list of items that under NMED rules at 40 CFR §264.56(j) provide a TSDF 15 days to report. If a contingency plan is implemented, the utility of an oral report with detailed information provided within 24 hours is questionable and in some cases, impractical. For example, LANL could hardly be held to report within 24 hours on the estimated quantity and disposition of recovered material that resulted from the incident. Third, the proposed permit requires the written report to	Page 39, Lines 9-11: Change sentence to read: "The Permittees shall notify the Department and appropriate local and tribal authorities that the Facility is in compliance with ~~Permit Section 2.11.7 before operations resume in the Facility’s affected areas~~40 CFR §264.56(i) and (h)."

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		be filed within 5 days (instead of 15 as allowed by § 264.56(j)), which is more stringent than NMED's rules for reporting contingency plan incidents at 40 CFR §264.56(j), and provides insufficient time to investigate the incident and generate such a report.	
110	Part 2, Section 2.12	Suggested change corrects typographical error within sentence.	Page 39, Lines 21-22: Add "40 CFR" to change sentence to read: "The Permittees shall comply with the record keeping and reporting requirements specified throughout this Permit and at 40 CFR § 264.73(a)."
111	Part 2, Section 2.12.2	Financial assurance for closure and post-closure is not required for other New Mexico federal facilities, including WIPP and Sandia. If required, however, financial assurance for closure or post-closure care costs would be paid for by the U.S. Government, and ultimately the taxpayer. Financial assurance closure and post-closure costs, and the administration of mechanisms, are expected to be several hundred million dollars or more. This would add significant costs to cleanup, potentially delay closure, and does not appear to be in the public interest.	Page 40, Lines 22-23: Please delete requirement number 8.
112	Part 2, Section 2.12.2	The proposed permit condition requiring Permittees to maintain "documents that address the entire Facility" to be retained until the Permit is terminated is vague and not consistent with 40 CFR §264.73, which imposes varying record retention times for clearly specified types of documents. LANL did not request this condition in their permit application, nor is there any support for it in the administrative record. Suggested revision is to make the condition consistent with the rule.	Page 39, Lines 33-34: Please replace sentence: "For documents that address the entire Facility (e.g., certification of a Facility program to reduce the volume and toxicity of hazardous waste) the Permittees shall maintain these documents until the Permit is terminated." with the following: "Permittees shall maintain these documents for the time periods specified in 40 CFR §264.73."
113	Part 2, Section 2.12.2	The proposed requirement to provide information required of a treatment facility under 40 CFR §268.7(b) for all wastes remaining in the ground after closure is not found in NMED or EPA rules, the administrative record, is not feasible, and is not protective of human	Page 40, Lines 28-29, Bullet #11: Please delete this bullet.

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		health and the environment. 40 CFR §268.7(b) requires treatment facilities to analyze their waste in accordance with a waste analysis plan. This requirement cannot be applied to disposal units that have ceased operating and are undergoing closure. Further, LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	
114	Part 2, Section 2.12.2	Editorial change that allows for the storage of information in any electronic form, including databases.	Page 39, Line 34: Please delete the word "unalterable".
115	Part 2, Section 2.12.6	The proposed requirement to inform the Department within 15 day and in writing of changes in "management personnel" referenced in the Permit is not clear and is not found in NMED or EPA rules, the administrative record, and does not protect human health and the environment. Further, no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D). The names of responsible corporate officers and representatives are provided in accordance with 40 CFR §270.11, and titles/positions are more important than individual names.	Page 41, Lines 12-14: Please delete this section.
116	Part 2, Sections 2.13, 2.14, 2.16	Financial assurance for closure and post-closure is not required for other New Mexico federal facilities, including WIPP and Sandia. If required, however, financial assurance for closure or post-closure care costs would be paid for by the U.S. Government, and ultimately the taxpayer. Financial assurance closure and post-closure costs, and the administration of mechanisms, are expected to be several hundred million dollars or more. This would add significant costs to cleanup, potentially delay closure, and does not appear to be in the public interest.	Please delete Sections 2.13, 2.14, and 2.16 of the draft Permit.
117	Part 2, Figure 2-2	Figure 2-2, Location Map of Access Gates, HE Exclusion Area Boundary, and Security Fences in the	Page 44: Replacement figure has been included with this document as Appendix

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		Vicinity of Technical Area 16, needs to be updated because HE Area Access Gate location has changed.	B.
118	Part 2, Figure 2-6	Figure 2-6 on page 48 needs to be updated because several structures depicted on this figure are no longer located at TA-54 West. This change was submitted with "Los Alamos National Laboratory Hazardous Waste Facility Permit Five Class 1 Permit Modifications," submitted on December 18, 2007.	Page 45: Replacement figure has been included with this document as Appendix C.
119	Part 2, Figure 2-8	Figure 2-8 on page 50 needs to be updated for current LANL boundary. This change was submitted with "Los Alamos National Laboratory Hazardous Waste Facility Permit Five Class 1 Permit Modifications," submitted on December 18, 2007.	Page 50: Replacement figure has been included with this document as Appendix D.
120	Part 3, Section 3.1	Suggested changes remove unnecessary language to add clarity to first sentence of the section.	Page 51, Lines 3-8: Please change the text to read: "The Permittees shall store and otherwise manage containers of hazardous waste in accordance with ~~the requirements of this Permit Part, in accordance with the requirements of~~ 40 CFR Part 264, Subpart I, which is incorporated herein by reference, in accordance with the requirements of Part 13 (*TA-50 Specific Permit Conditions*), Part 14 (*TA-54 Specific Permit Conditions*), Part 15 (*TA-55 Specific Permit Conditions*), and Part 16 (*TA-3 Specific Permit Conditions*), and ~~in accordance with the requirements in~~ Attachment G (*Container Management*)."
121	Part 3, Section 3.1	Recommended text change is consistent with comments on revision to Attachment B, so that operating capacities are located in only one place and will therefore be easier to keep consistent and will cause less confusion.	Page 51, Lines 13-15: Please change the text to read: "The Permittees shall not store containers of hazardous waste in excess of the maximum capacities for each permitted container storage unit identified in ~~Attachment B~~Table O-1 of Attachment O."
122	Part 3, Section 3.2	The proposed condition can be construed to require containers that are not in "good condition" to be repaired, overpacked, or (the waste) repackaged. NMED rules, however, do not impose these types of requirements but instead require at 40 CFR §264.171 that a TSDF transfer the waste from a container that is	Page 51, Lines 19-23: Please replace this condition as follows: "If a container holding hazardous waste is not in good condition (e.g., has severe rusting, apparent structural defects) or if it begins to leak, the Permittees shall transfer the hazardous waste from such a container to another container that is in good condition, in accordance with 40 CFR §

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		not into good condition to a container that is in good condition. To the extent the permit condition requires containers that are not in good condition to be repaired, the permit condition goes beyond NMED rules and appears to be a re-write of an existing rule to result in a more stringent requirement. To avoid misinterpretation of this requirement, LANL suggests changes consistent with this rule and other NMED RCRA permits. Further, LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	264.171 which is incorporated by reference." and delete: "If a container is not in good condition or begins to leak, the Permittees shall: 1. transfer the waste from such a container into a container that is in good condition; and 2. repair or over-pack the container or repackage the waste in a container that is in good condition."
123	Part 3, Section 3.3	Suggested change creates consistency with the LANL permit application, as storage at various container storage units occurs. All containers used for storage meet the requirements of 40 CFR Part 264, Subpart I. Suggested change also defines first use of the acronym for container storage unit (CSU).	Page 51, Lines 25-27: Change section to read: "The Permittees shall only use containers that comply with ~~DOT shipping container regulations (49 CFR § 173 - *Shippers - General Requirements for Shipment and Packaging*, and 49 CFR § 178 - *Specifications for Packaging*)~~ 40 CFR Part 264, Subpart I, Use and Management of Containers, for storage of hazardous waste at container storage units (CSUs). Prior to shipment of waste, containers used must comply with DOT shipping container regulations (49 CFR 173 - Shippers - General Requirements for Shipment and Packaging, and 49 CFR 178 - Specifications for Packaging)."
124	Part 3, Section 3.4	Suggested change corrects a typographical error within the title of the section.	Page 51, Line 28: Change title of section to read: "3.4 COMPATIBILITY OF WASTE WITH CONTAINERS".
125	Part 3, Section 3.5	The paragraph at lines 14-17 should be revised to reflect the requirement of 40 CFR §264.73(b)(2) to include in the operating record the location and quantity of waste at the permitted unit. See also Section 2.12.2.	Page 52, Lines 14-17: Please change the text to read: "The Permittees shall ensure that when waste containers are moved during storage, the location of each hazardous waste and the quantity at each location are documented in accordance with Permit Section 2.12 (40 CFR § 264.73(b)(2))." Delete references to waste package identification numbers (bar codes), origin and destination and package changes, which are not required by this regulation.

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126	Part 3, Section 3.5	The proposed requirement to identify container storage areas by paint, tape, or other visible markings is not found in NMED or EPA rules and does not appear to be more protective of human health and the environment. Suggested change requires LANL to demarcate unit boundaries, but does not prescribe the exact means. LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record.	Page 52, line 7: Please modify the sentence: "The Permittees shall establish and maintain lines of demarcation which identify the boundaries of all permitted container storage units ~~container storage area permitted units~~unless the units include the entire floor area of a building, room, or designated asphalt pad."
127	Part 3, Section 3.5.1	The proposed requirement to stack containers to a height of 10 feet, 2 inches is not a regulatory requirement, and does not appear to be more protective of human health and the environment. LANL's permit application stated that containers will be stacked 3 containers or 10 foot high based on unit configuration and the facility is not aware of any support in the record for unilaterally changing this requirement to "10 feet, 2 inches." The second sentence in the paragraph requires storage of more than two stacked containers on an "absolutely level surface." This requirement is not part of the regulations and it is unclear how Permittees would demonstrate compliance. In addition, the requirement for a level surface may conflict with 40 CFR §264.175, which requires container storage areas to have a sloped secondary containment system. LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record.	Page 52, Lines 23-25: Please change the first sentence to read: "The Permittees are authorized to stack containers of hazardous waste to a maximum of 3 containers high (40 CFR § 270.32(b)(2))." from: "The Permittees are authorized to stack containers of hazardous waste to a maximum height of 10 feet, 2 inches (40 CFR § 270.32(b))." Delete the sentence: "Containers stacked greater than two high shall be located on an absolutely level surface."
128	Part 3, Section 3.5.1	The proposed requirement to not store any containers within five feet from the perimeter fence and any structure is not found in NMED or EPA rules, or in the administrative record, and does not appear to be more protective of human health and the environment than the regulatory requirements. The requirement is vague and could be interpreted to apply to indoor container	Page 52, Lines 26-28: Please change the sentence to read: "The Permittees shall ensure that hazardous waste containers stored outdoors are not stored within five feet of the perimeter fence, within five feet of any permanent building~~structure~~, or within five feet of a paved or unpaved roadway."

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		storage units and virtually any "structure" regardless of size or permanency. Suggested change clarifies this ambiguity and is consistent with LANL permit application which does not specify this distance for indoor container storage units.	
129	Part 3, Section 3.5.1	Suggested changes clarify that it is not necessary to cover all containers to protect them from the weather. Certain containers are protected from contact with precipitation by design.	Page 52, Lines 31-33: Please change paragraph to read: "The Permittees shall ensure that hazardous waste containers that are stored outdoors and are not being actively managed are ~~precluded~~ protected from contact with precipitation using weather protective equipment (e.g., containment shell, secured tarp) <u>or are protected by the design of the container (e.g., transportainer, Transuranic Waste Package Transporter II container)</u> (40 CFR § 270.32(b)(2))."
130	Part 3, Section 3.6	While NMED has no regulatory authority over the radioactive component of mixed waste, LANL understands that a radioactive component must be identifiable on a container in order to fully identify the waste and to establish compliance with certain exemptions within the hazardous waste regulations. Suggested change to text is intended to allow for this compliance without requiring a specific or additional label under this Permit.	Page 53, Lines 4-5: Please revise the sentence from: "All containers holding mixed waste shall include a "Radioactive Materials/Radioactive Waste" label." to be: "<u>All containers holding mixed waste shall be identified as "Radioactive."</u>""
131	Part 3, Section 3.6	The proposed requirement to label container not containing "free liquids" is not found in NMED or EPA rules and does not appear to increase protection of human health and the environment. An additional labeling requirement would be onerous and costly for the Facility. LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record.	Page 53, Lines 7-9: Please delete the requirement: "The Permittees shall ensure that all containers not stored on a secondary containment system, including a secondary containment pallet, are clearly labeled as not containing free liquids (40 CFR § 270.32(b))."
132	Part 3, Section 3.7.1	NMED paraphrases it rule at 40 CFR §264.175(b)(3) by adding an undefined term "residual" thus making the requirement more stringent than and inconsistent with its existing rules. Containers with "residual" liquids are not subject to this requirement, only containers with	Page 53, Line 12-14: Please change the first sentence from: "The Permittees shall maintain secondary containment systems in all CSUs used to store wastes which contain free or residual liquids in compliance with 40 CFR § 264.175, which is incorporated herein by reference." to read: "Th<u>e Permittees</u>

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		"free liquids" a defined term (40 CFR §260.10). LANL's permit application did not suggest expanding this requirement to include residual liquids, and no support could be found for the condition in the administrative record.	shall maintain secondary containment systems in all CSUs used to store wastes which contain free liquids in compliance with 40 CFR § 264.175, which is incorporated herein by reference."
133	Part 3, Section 3.7.1	NMED paraphrases it rule at 40 CFR §264.175(b)(5) in a manner that omits an important clause thus making the requirement more stringent than and inconsistent with its existing rules. The requirement to remove spilled or leaked waste must be *timely as necessary to prevent overflow of the collection system*, and is not based on a 24 hour requirement regardless of the capacity of the collection system. Collection systems are designed at different capacities to contain spilled and leaked wastes, which is the reason the rule did not prescribe a time-period. LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record.	Page 53, Lines 17-18: Change text to read "The Permittees shall remove spilled or leaked waste and accumulated precipitation from any sumps or collection areas in a timely manner ~~within 24 hours~~, as is necessary to prevent the overflow of the collection system. (264.179(b)(5))."
134	Part 3, Section 3.7.1	The proposed requirement is not found in NMED or EPA rules, is not supported in the administrative record, and does not appear to increase protection of human health and the environment. LANL's permit application did not suggest this permit condition. In addition, it is not specified within this requirement how compliance is demonstrated.	Page 53, Line 23-32: Delete the sentence: "If a coating or sealant is used, the Permittees shall maintain documentation in the Facility Operating Record that the coating or sealant was applied in accordance with the manufacturer's specifications that includes, but is not limited to, the manufacturer's specifications and a demonstration that the coating or sealant was applied in accordance with the manufacturer's specifications and that the coating or sealant is re-applied in accordance with the manufacturer's specifications."
135	Part 3, Section 3.7.1	The proposed requirement is not found in NMED or EPA rules, is not supported in the administrative record, and does not appear to improve protection of human health and the environment. The condition can be construed to apply retroactively which would impose a condition LANL cannot meet. LANL's permit application did not suggest this permit condition.	Page 53, Lines 33-37: Please delete the sentence: "If a flexible liner is used, the Permittees shall maintain documentation in the Facility Operating Record that includes, but is not limited to, the manufacturer's specifications and demonstration that the flexible liner was installed in accordance with the manufacturer's specifications and that the flexible liner is maintained in accordance with the manufacturer's specifications (40 CFR § 270.32(b))."

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136	Part 3, Section 3.7.1	NMED paraphrases it rule at 40 CFR §264.15(c) in a manner that omits an important clause thus making the requirement more stringent than and inconsistent with its existing rules. The condition to *repair within 15 days* is not in the rule and may be difficult to meet in some cases. If equipment has malfunctioned or is broken, the facility may choose not to repair the broken equipment but to replace it with new equipment. This is one reason the rule does not prescribe a set time period to remedy broken equipment. Instead, a TSDF must remedy any deterioration or malfunction of equipment on a schedule that ensures the problem does not lead to an environmental harm. Replacement of broken equipment is one such remedy. Suggested change makes this condition consistent with the rule. Further, LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record.	Page 54, Lines 1-8: Please change first sentence to read: "If the base, liner or coating is cracked or otherwise damaged, the Permittees shall repair the damage promptly and properly, ~~within 15 calendar days of detecting the problem~~ on a schedule that ensures that the problem does not lead to an environmental or human health hazard."
137	Part 3, Section 3.8	The proposed requirement for container labels to be read without moving them is not found in the cited reference 40 CFR §264.174 and does not appear based in protection of human health and the environment. Some containers that are not stacked may be stored on drum dollies which can be easily moved. This requirement prohibits the moving of these containers in order to read the labels. LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	Page 54, Line 27. Please delete " and for container labels to be read without moving them," or insert language that will allow for minor movement of containers that are not stacked.
138	Part 3, Section 3.9	Suggested change corrects a typographical error.	Page 55, Line 3: Change "that" to "than".
139	Part 3, Section 3.9	Suggested change corrects a typographical error.	Page 55, Line 19: Change "in" to "is".
140	Part 3, Section 3.9	NMED rewrites the rules at 40 CFR §§264.1 and 264.1080(b) in a manner that omits an important clause	Please either incorporate the following language by reference of add the correct exemptions. LANL suggests incorporating by reference to

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		thus making the requirement more stringent than and inconsistent with its existing rules. The permit condition provides an incomplete list of exemptions from the requirement to control air pollutant emissions from a tank or container as specified in NMED rules at 40 CFR §§264.1080(b)(1) -(b)(8) and 264.1. As drafted, the permit condition is more stringent and inconsistent with NMED rules. To be consistent with NMED rules, suggest incorporating these exemptions or add the additional circumstances described. Further, LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	reduce the length of the Permit. The requirement to control air pollutant emissions from a container or tank at 40 CFR Part 264, Subpart CC applies to all containers and tanks at Permitted Units identified in this permit, except as provided for in 40 CFR §§ 264.1 and 264.1080(b). Or Add the following exemptions: " <u>3. a container or tank managing hazardous waste with an average volatile organic constituent content that is less than 500 ppmw at the point of waste generation;</u> <u>4. a container or tank that received hazardous waste before December 6, 1996, and to which no hazardous waste was added on or after this date;</u> <u>5. a tank which has stopped receiving hazardous waste and is undergoing closure;</u> <u>6. a container or tank that is certified to be equipped with and using air emission controls that meet the applicable CAA regulations at 40 C.F.R. part 60, part 61, or part 63 (except tanks being controlled through the use of an enclosure rather than a cover);</u> <u>7. a tank that meets the waste water exemption;</u> <u>8. a container or tank that is used for emergency or spill management;</u> <u>9. a container or tank that is located in a totally enclosed treatment facility;</u> <u>10. a tank with process vents; or</u> <u>11. a container or tank that is used solely for on-site treatment or storage of hazardous waste as part of remediation activities required by RCRA, CERCLA or other federal or state laws.</u>"
141	Part 4 Section 4.4	NMED paraphrases it rules at 40 CFR §§264.193(c)(4) and 264.196 omitting an important clause and making the requirement more stringent than and inconsistent with its existing rules (see also NMSA 1978, 74-4-4D). The proposed language omits an important provision	Page 58, 7-8: Please revise the sentence to read: "The Permittees shall ensure that spilled, leaked, or otherwise accumulated liquids are removed from the secondary containment system within 24 hours <u>or in as timely a</u>

Comment Number	Section of Permit	Comment	Suggested Text Change
		for the facility provided by 40 CFR §264.193(c)(4). Suggested change makes this condition consistent with the rule. LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record.	manner as is possible to prevent harm to human health and the environment (40 CFR § 264.193(c)(4)).”
142	Part 4 Section 4.4	The permit condition imposes a notice requirement not based on NMED rules, and without going through rulemaking. NMED rules do not require a TSDF to file a notice within 5 days after discovery of any accumulated liquid is found in a secondary containment system. Secondary containment systems are designed to accumulate liquids, and such a notice requirement is not only unnecessary but also unduly burdensome and does not protect human health and the environment. Instead, NMED rules require a 30-day notice to be filed for releases “into the environment” resulting from spills or leaks. This notice requirement is to protect human health and the environment; a stringent 5-day notice requirement for accumulated liquids not released into the environment is unreasonable and not based in law. LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record	Page 58, Lines 9-10. Please delete the sentence: “The Permittees shall notify the Department of any accumulated liquids within a secondary containment system within five days of discovery of such liquids (40 CFR §270.32(b)).”
143	Part 4 Section 4.4	The proposed requirement is not found in NMED or EPA rules, is not supported in the administrative record, and is not protective of human health and the environment. Condition is not a requirement of 40 CFR §264.73 (Operating Record). Further, LANL's permit application did not suggest this permit condition.	Page 58, Lines 11-15: Please delete the paragraph or clarify how the demonstration of conforming to manufacturer's recommendations should be documented and that this permit condition cannot retroactively apply to tank system components already in use.
144	Part 4, Section 4.4	Suggested change corrects a typographical error.	Page 58, Line 24: Remove duplicate “that”.
145	Part 4 Section 4.4	NMED rewrites the rules at 40 CFR §264.196, changing important clauses thus making the requirements more stringent than and inconsistent with its existing rules. The permit condition adds regulatory	Page 58, Lines 29-35: Please delete the term "to the discretion of the Department" from line 30.

Comment Number	Section of Permit	Comment	Suggested Text Change
		language not found in the rule at 40 CFR §§264.196(e)(2) through (4). These rules specify the action Permittees must take if tank system integrity has been damaged. They do not provide for regulatory discretion. Suggested change makes these conditions consistent with the rules. Further, LANL's permit application did not suggest these permit conditions, and no support could be found for the conditions in the administrative record (see also NMSA 1978, 74-4-4D)	
146	Part 4, Section 4.6	Suggested change corrects a typographical error.	Page 59, Line 16: Change "that" to "than".
147	Part 4, Section 4.6	NMED rewrites the rules at 40 CFR §§264.1 and 264.1080(b) in a manner that omits an important clause thus making the requirement more stringent than and inconsistent with its existing rules. The permit condition provides an incomplete list of exemptions from the requirement to control air pollutant emissions from a tank as specified in NMED rules at §§264.1080(b)(1) -(b)(8) and 264.1. As drafted, the permit condition is more stringent and inconsistent with NMED rules. To be consistent with state rules, suggest incorporating these exemptions or add the additional circumstances described. See comment for Section 2.4.8.	Page 25, Lines 30-35: Please incorporate the following language by reference or add the correct exemptions. LANL suggests incorporating by reference to reduce the length of the Permit. "<u>The requirement to control air pollutant emissions from a tank at 40 CFR Part 264, Subpart CC applies to all tanks at Permitted Units identified in this permit, except as provided for in 40 CFR §§ 264.1, 264.1080(b), and 264.1082.</u>" Or Add the following exemptions: "<u>3. a container or tank managing hazardous waste with an average volatile organic constituent content that is less than 500 ppmw at the point of waste generation;</u> <u>4. a container or tank that received hazardous waste before December 6, 1996, and to which no hazardous waste was added on or after this date;</u> <u>5. a tank which has stopped receiving hazardous waste and is undergoing closure;</u> <u>6. a container or tank that is certified to be equipped with and using air emission controls that meet the applicable CAA regulations at 40 C.F.R. part 60, part 61, or part 63 (except tanks being controlled</u>

Comment Number	Section of Permit	Comment	Suggested Text Change
			through the use of an enclosure rather than a cover); 7. a tank that meets the waste water exemption; 8. a container or tank that is used for emergency or spill management; 9. a container or tank that is located in a totally enclosed treatment facility; 10. a tank with process vents; or 11. a container or tank that is used solely for on-site treatment or storage of hazardous waste as part of remediation activities required by RCRA, CERCLA or other federal or state laws."
148	Part 5, Section 5.1	Suggested change corrects a typographical error.	Page 61, Line 15: Replace "in" with "where".
149	Part 5 Section 5.2	NMED paraphrases it rule at 40 CFR §264.193(c)(4) in a manner that omits an important clause thus making the requirement more stringent than and inconsistent with its existing rules. The requirement to remove spilled or leaked waste from a secondary containment system must be within 24 hours, *or in a timely manner as is possible to prevent harm to human health and the environment, if the Permittees can demonstrate that removal of the released waste or accumulated precipitation cannot be accomplished within 24 hours.* LANL's permit application did not suggest this limit on the permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	Page 61, 23-24: Please change the text to read: "The Permittees shall remove spilled or leaked waste and accumulated precipitation from any sumps or collection areas within 24 hours, or in as timely a manner as is possible to prevent harm to human health and the environment, if the Permittees can demonstrate that removal of the released waste or accumulated precipitation cannot be accomplished within 24 hours (40 CFR § 264.193(c)(4)).\" from: "The Permittees shall ensure that spilled, leaked, or otherwise accumulated liquids are removed from the secondary containment system within 24 hours (40 CFR § 264.193(c)(4))."
150	Part 5 Section 5.2	The permit condition imposes a notice requirement not based on NMED rules, and without going through rulemaking. NMED rules do not require a TSDF to file a notice within 5 days after any accumulated liquid is found in a secondary containment system. Secondary containment systems are designed to accumulate liquids, and such a notice requirement is not only unnecessary but also unduly burdensome and does not	Page 61, Lines 25-26 Please strike lines 25-26.

Comment Number	Section of Permit	Comment	Suggested Text Change
		protect human health and the environment. Instead, NMED rules require a 30-day notice to be filed for releases "into the environment" resulting from spills or leaks. The requirement to meet a stringent 5-day notice requirement for accumulated liquids not released into the environment is unreasonable and not based in law. Further, LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record	
151	Part 5 Section 5.2	The proposed requirement is not found in NMED or EPA rules, the administrative record, and does not appear based in protection of human health and the environment. Condition is not a requirement of 40 CFR §264.73 (Operating Record) and was not included in permit applications. Further, LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	Page 61, Lines 27-31: Please delete paragraph or clarify how the demonstration of conforming to manufacturer's recommendations should be documented and that this permit condition cannot retroactively apply to tank system components already in use.
152	Part 5, Section 5.2	Suggested change corrects a typographical error.	Page 62, Line 5: Remove duplicated word "that".
153	Part 6 Section 6.1	Suggested changes fix typographical errors (spacing for "." and the inclusion of "high explosives (HE)"), and include language consistent with regulatory requirements for open burning and consistent with language in permit application. The terms "detonation and deflagration" go beyond the open burning of waste explosives and can be interpreted to include certain chemicals that have a potential to detonate rather than only HE or HE-contaminated waste. LANL's permit application only included procedures for and potential impacts from the open burning of waste explosives and HE-contaminated waste. Chemicals that present the potential for detonation or deflagration that are not HE contaminated, are treated using the emergency destruction procedures of the LANL Hazardous	Page 63, Lines 11-21: Revise text to read: "The Permittees shall limit open burning treatment activities to waste explosives as defined by 40 CFR § 265.382~~that would result in detonation or deflagration~~. This includes the following high explosives (HE) or HE-contaminated materials: 1. water; 2. solvent waste; 3. used oil; 4. solid and scrap HE; 5. commercial chemical products; 6. wet HE; 7. solid waste; 8. equipment; and 9. liquid acids, bases, and/or inorganic salt solutions."

Comment Number	Section of Permit	Comment	Suggested Text Change
		Materials Response personnel.	
154	Part 6, Section 6.2	The proposed change clarifies that run-on and runoff controls for the open burning units are already installed and will be maintained. Further, berms and ditches are not the main storm water controls located at the TA-16 Burn Ground. LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record.	Page 63, Lines 23-24: Please change the first sentence of the section to read: "The Permittees shall maintain run-on and run-off controls (40 CFR § 270.14(b)(8)(ii)), including the following structures where present at the OB units:"
155	Part 6, Section 6.2	The permit condition to ensure that burning operations do not occur "if storms are forecasted for the location of the permitted unit within a four hour period" would be very difficult to meet, and does not appear to be based in the administrative record. Open burning of waste does not occur during precipitation or high wind conditions, or when any inclement weather is imminent. Forecasting storm events, however, involves fluctuating percentages and ranges in the likelihood of precipitation from very low to mid-range (especially during the summer monsoon season), make this permit condition indefinite. Further, LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record.	Page 64, Lines 10-11: Please delete the text: "or if storms are forecasted for the location of the permitted unit within a four-hour period"
156	Part 6, Section 6.2	The proposed requirement to ensure that burning does not occur during weather inversions within a four hour period would be difficult to meet and does not appear to be based on the administrative record. There is low certainty for the observation of a weather inversion due to the height of weather towers within the area. Additionally, forecasting of weather is subjective and makes compliance with this permit condition difficult to ensure and document and has no specific added protection for human health or the environment. LANL's towers are incapable of detecting weather inversions because of their height. LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the	Page 64 lines 12-13 Please delete the sentence: "The Permittees shall ensure that burning operations do not occur during a weather inversion or if an inversion is forecasted for the location of the permit unit within a four-hour period."

Comment Number	Section of Permit	Comment	Suggested Text Change
		administrative record.	
157	Part 6, Section 6.2	The proposed requirement allows for all fire prevention measures, including mowing the ground surface as outlined in the permit application and adds clarification to the word "removal". LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record.	Page 64, Lines 14-15: Please change text as follows: "The Permittees shall remove or keep mowed any ~~and all~~ combustible material or the ground surface will be wetted prior to open burning operations at a minimum radius of 200 ft from the open burn treatment location as a fire prevention measure."
158	Part 6, Section 6.2	Soil contaminated with high explosives may require multiple treatment phases and complex staging similar to oversized equipment. Suggested change allows for this situation. LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record.	Page 64 lines 17-19 Please change the text to read: "If oversized equipment or soil requires complex staging, the Permittees may stage on a burn pad for 48-hours and the Department will not consider the staging inappropriate storage; however the equipment or soil and the unit must be covered."
159	Part 6, Section 6.2	The suggested change clarifies that a minimum temperature can only be maintained at TA-16-388 because open burning operations at this unit use a supplemental fuel of propane. TA-16-399 does not use supplemental fuel; therefore a minimum temperature for an open burning operation cannot be specified. LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record.	Page 64 lines 20-21 Please change the text to read: "The Permittees shall maintain a minimum temperature of 400 degrees Celsius during open burning at the Technical Area (TA) 16-388 Flash Pad to ensure complete thermal degradation of HE contaminated wastes."
160	Part 6, Section 6.2	The proposed requirement to cover the unit 8 hours after the last open burning even to cover containment devices conflicts with requirements under the DOE's Explosive Safety Manual. The manual dictates that no entry should be allowed until eight hours have elapsed unless it can be determined visually that all explosives have been destroyed. Suggested changes are consistent with this requirement. Further, LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record.	Page 64 lines 24-25 Please change the text to read: "The Permittees shall wait eight hours after the last open burn event to cover the containment devices (e.g., pans, trays, or flash pads) ~~within eight hours of the last open burn event~~ , but should cover the containment devices as close to eight hours after as possible while awaiting collection of treatment residue." Or include a clause that would allow for the units to be covered within 8 hours if it can be determined visually that all explosives have been destroyed.
161	Part 6, Section 6.2	The DOE's Explosive Safety Manual requires LANL workers wait at least 24 hours before ashes are	Page 64 lines 26-28 Change text to read: "The Permittees shall clean open burn unit

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		collected. Therefore, a requirement to clean up treatment residues within 24 hours conflicts with DOE Safety requirements and could not be met. Also, requiring the management of all waste treatment residues to be managed as hazardous waste until proven otherwise by waste analysis is not consistent with NMED rules, and waste characterization practices at LANL. Treatment residues may not constitute a "hazardous waste" and may be a "New Mexico Special Waste". Many of the TA-16 Burn Ground treatment residues have previously been characterized as New Mexico Special Waste in accordance with 20.9 NMAC. Wastes that have an EPA hazardous waste number associated with them prior to treatment that is not associated with a characteristic hazardous waste will be managed as hazardous waste after treatment. Waste characterization is performed on all treated waste residues. The proposed permit condition clarifies that treatment residue will be managed appropriately, depending on the outcome of the characterization. LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record.	containment devices of any treatment residue ~~within~~ after 24 hours have elapsed after any open burning event. The removal of treatment residue shall be conducted only after it has been determined that it is safe for personnel to enter the treatment unit. These residues shall be ~~managed as a hazardous waste until determined otherwise based on waste analyses~~characterized in accordance with the Waste Analysis Plan (Attachment C), and managed appropriately.
162	Part 6, Section 6.2	The proposed requirement to wait a minimum of 24 hours between burns is not based on LANL's permit application or the administrative record. Suggested change clarifies that each unit can be used once a day. This is also consistent with LANL's permit application.	Page 64 lines 29-30 Change text to read: "At each unit, t~~T~~he Permittees shall wait a minimum of 24 hours between open burning events before burn pan/flash pad reuse to allow the surface to cool."
163	Part 9, Section 9.1	The proposed condition indicates that disposal units are subject to corrective action requirements under the Consent Order, as well as closure requirements under the Permit. This requirement could be misconstrued to require compliance with closure activities (including remediation) in addition to corrective action under the Consent Order. LANL understands that this is not the HWB's intent and believes that Section 9.1 should be revised to describe the interface between the Permit and	The text on page 71, add the following after lines 11-14: "The land disposal units located at TA-54 Areas G, H, and L are situated among solid waste management units (SWMUs) and areas of concern (AOCs), releases have occurred, and the land disposal units and one or more of the SWMUs or AOCs are likely to have contributed to the releases. In accordance with 40 CFR § 264.110(c), incorporated herein by reference, the TA-54 landfill units shall be closed under alternative closure requirements rather than the closure

Comment Number	Section of Permit	Comment	Suggested Text Change
		Consent Order for closure of disposal units located at TA-54. TA-54 Areas G, H, and L contain both landfill units that meet the definition of regulated units under 40 CFR 264 Subpart F and are subject to closure under RCRA, and corrective action units that are subject to the Consent Order. Section III.W.1 of the Consent Order states that closure and post-closure care requirements will be addressed in the Permit and not the Consent Order. Therefore, the TA-54 disposal units, which are subject to closure under the Permit, should not also be subject to corrective action under the Consent Order. The revised text describes how coordination of closure under the Permit will be coordinated with the Consent Order. Alternative closure requirements for these units will be established using the Consent Order corrective action process, but administrative authority for closure of these sites will remain as part of the Permit.	requirements of 40 CFR 264 Subparts G and N. The alternative closure requirements for these disposal units shall be established using the remedy selection process contained in Section VII.D of the Consent Order. The requirements for closure plans for landfill units at Areas G, H, and L contained in 40 CFR § 246.112, incorporated herein by reference, shall be satisfied by Corrective Measures Implementation (CMI) Work Plans to be prepared pursuant to Section VII.E.2 the Consent Order. Following approval of the CMI Work Plans by the Department, the Permittees shall submit a permit modification request to incorporate closure requirements for the TA-54 landfill units."
164	Part 9, Section 9.1	Section 9.1 suggests that use of alternative closure requirements under 40 CFR §264.110(c) and coordination with corrective actions is only applicable where permitted units cannot achieve clean closure. The permit should also allow the process under 40 CFR §264.110(c) to be applied to any sites for which it is applicable. 40 CFR §264.110(c) does not limit the applicability of alternative closure requirements to units that cannot achieve clean closure. Under 40 CFR §264.110(c)(1), alternative closure requirements can be used if the regulated unit is situated among SWMUs or AOCs, a release has occurred, and both the regulated unit and one or more SWMUs or AOCs are likely to have contributed to the release. The revised text incorporates these regulatory requirements and allows greater flexibility for closure of permitted units that are	The text on page 71, please revise lines 15–18 as follows: "If a permitted unit undergoing closure is situated among SWMUs or AOCs, a release has occurred, and both the permitted unit and one or more of the SWMUs or AOCs are likely to have contributed to the release, alternative closure standards for the permitted unit may be established in accordance with 40 CFR § 264.110(c), incorporated herein by reference. Closure of such units shall be coordinated with corrective action for the associated SWMUs and/or AOCs conducted pursuant to the Consent Order. Alternative closure requirements shall be established using the corrective action process specified in Chapter VII of the Consent Order and the Permit shall be modified to incorporate these closure requirements." from: "If a permitted unit undergoing closure is situated among solid waste management units (SWMU) or areas of concern (AOC) and cannot achieve clean closure as defined in Permit Section 9.3, clean-up of the permitted unit shall be coordinated with corrective action for the SWMUs or AOCs in

Comment Number	Section of Permit	Comment	Suggested Text Change
		collocated with corrective action units.	accordance with 40 CFR § 264.110(c)(1), which is incorporated herein by reference."
165	Part 9, Section 9.1	Section 9.1, General Conditions, should include a reference to the specific permitted units subject to closure for clarity.	Page 71, Lines 3-4: Suggest the addition of the following sentence after the first sentence in the section: "The permitted units to be closed under this section include those contained in Attachment O (*Hazardous Waste Management Units*), Table O-1, Permitted Units Actively Managing Hazardous Waste, and in Table O-4, Permitted Units Undergoing Closure. These permitted units include the process descriptions, S01-Storage in Containers, S02-Storage in Tanks, T01-Treatment in Tanks, X01-Open Burning, X01-Open Detonation, and D99-Other Disposal."
166	Part 9, Section 9.1	The Department provides sections in Part 9 detailing closure requirements for Storage and Treatment Units and Units to be Closed as Landfills but does not provide a section nor detail closure requirements for Open Burn and Detonation Units. A new section should be inserted to describe closure requirements for these sites.	Page 71, Lines 19-21: Suggest moving Section 6.3, *General Closure Requirements* to this Part. Suggest also deleting references Part 12, which does not appear to include closure requirements.
167	Part 9, Section 9.2.1	The draft Permit does not include timeframes for approval of the closure plans to be submitted as Class 3 permit modifications and is not worded to allow earlier submittals to meet the closure plan submittal schedule. Class 3 permit modification approval procedures do not specify timeframes for processing the closure plans (40 CFR §270.42). This may be a critical issue in situations where closure of storage areas must be completed prior to the beginning of closure activities for SWMUs (e.g., TA-54 Areas L and G) to meet the compliance schedules stipulated in the 2005 Consent Order.	Page 72, Lines 5-11: Suggest adding language to specify an approval timeframe for the closure plans (Line 12: "Approval of these closure plans will be obtained within 180 days of submittal or closure activities may be started by the Permittees as contained in the closure plans.") and/or provide a condition that allows for earlier submittals of the closure plans (Replace the term "within" in Lines 9-11 with "no later than" and/or add at Line 12: "Nothing shall prevent the Permittees from submitting the closure plans prior to the effective date of this Permit.")
168	Part 9, Section 9.2.1.1	The identification of contaminants of potential concern should precede other bullets in this section.	Page 73, Line 12: Suggest moving Bullet 5 to be the first item in the list.
169	Part 9, Section	Editorial change for clarity.	Suggest rearranging a section in Part 9 for clarity. Section 9.3 (Closure Performance Standards) could be placed behind Section 9.1

Comment Number	Section of Permit	Comment	Suggested Text Change
	9.3		(General Conditions), as all the following unit-specific sections would be subject to the same conditions.
170	Part 9, Section 9.2.1.1	A bullet should be added to the list of sampling and analysis items for inclusion in the Sampling and Analysis Plan (SAP) that allows for waste characterization of items to be disposed of as waste during the closure process.	Page 72, please insert new bullet #4: Suggest: "Sampling and analysis, if necessary, for waste characterization of any waste generated during closure in accordance with Attachment C of this Permit."
171	Part 9, Section 9.2.3.1	Paragraph as written does not include the extension provision in 40 CFR §264.112(d)(2)(i). As a result, NMED rewrites the rule in manner that makes it more stringent than and inconsistent with the existing rule. Suggested change makes provision consistent with NMED rules (see also NMSA 1978, 74-4-4D).	Page 73, Line 30: Suggest adding "If the Permittee can demonstrate to the Secretary that the hazardous waste management unit has the capacity to receive additional hazardous waste and has taken all steps to prevent threats to human health and the environment, including compliance with the requirements of this Permit, the Secretary may approve an extension to this one year limit."
172	Part 9, Section 9.2.3.2	NMED rewrites the rule at 40 CFR §264.113 in a manner that omits important clauses from the cited regulations thus making the requirement more stringent than and inconsistent with its existing rules. LANL suggests the following changes to the sentence regarding time allowed for closure to more completely summarize the regulation (see also NMSA 1978, 74-4-4D).	Page 73-74, Lines 32-33 and Lines 1-2: Suggest changing from: "The Permittees shall complete all partial or final closure activities in compliance with this Permit Part within 180 days after receiving the final volume of hazardous waste at a permitted unit unless an extension is approved by the Department (40 CFR §§ 264.113(a)(1) and (2) or 264.113(b)(1) and (2), which are incorporated herein by reference)." to read: "The Permittees shall complete all partial and final closure activities in compliance with this Permit Part within 180 days after receiving the final volume of hazardous waste at a permitted unit. In the event that the activities will take longer than 180 days to complete, the Department may approve an extension if the Permittees can make the appropriate regulatory demonstrations (40 CFR §§264.113(a)(1) and (2) or §§264.113(b)(1) and (2), which are incorporated herein by reference)."
173	Part 9, Section 9.2.4	The paragraph should include a sentence listing the permitted units that would be affected by the closure requirements of this section for clarity.	Page 74, Line 6: Please see changes made to Attachment O, Table O-1.
174	Part 9, Section 9.2.4.1	NMED rewrites the rule at 40 CFR §264.113 in a manner that omits important clauses from the cited regulations thus making the requirement more stringent	Page 74, Lines 8-11: Please change text to read: "Within 90 days after receiving the final volume of hazardous waste at a permitted unit, the Permittees shall

Comment Number	Section of Permit	Comment	Suggested Text Change
		than and inconsistent with its existing rules. LANL suggests the following change to the sentence regarding removal of hazardous waste to more completely summarize the regulations.	treat, remove from the unit, or dispose of on-site, all hazardous waste in accordance with a Department approved Closure Plan (40 CFR §§ 264.113 and 264.178 (which are incorporated herein by reference)) unless an extension is approved by the Department (40 CFR § 264.113(a)(1) or (2))."
175	Part 9, Section 9.2.4.2	Sentence contains a typographical error.	Page 74, Line 15: Correct reference to Section 9.2.1.
176	Part 9, Section 9.2.4.2	The 60 day closure notification requirement in 40 CFR §264.112(d)(1) is limited to land units (surface impoundments and landfills). Storage units have a requirement for a 45 day closure notification. This requirement would lead to the situation of notifying NMED of a structural assessment followed fifteen days later with the closure notification for container storage units. The requirement should be revised to be consistent with NMED rules	Page 74, Line 22: Suggest replacing the text requiring a 60 day structural assessment notification with 45 days for storage units or stipulating that the structural assessment notification will be submitted at the same time as the closure notification of Section 9.2.3.1.
177	Part 9, Section 9.2.4.2	Text should be changed to allow Permittees to not have to change the SAP in the event that it is determined to be detailed enough and not changed by the structural assessment and records review.	Page 74, Lines 27-31: Please change text that reads: "Upon completion of the structural assessment and records review, the Permittees shall submit an updated SAP in the Closure Plan (Permit Section 9.2.2) for the permitted unit to be closed in accordance with the requirements in this Permit Section and Permit Sections 9.2.4.6 and 9.2.5.6 which includes all additional sampling locations, methods, and procedures identified as necessary during the records review and structural assessment (40 CFR § 264.112(c))." to read: "Upon completion of the structural assessment and records review, the Permittees shall submit an updated SAP in the Closure Plan (Permit Section 9.2.2) if needed to close the permitted unit in accordance with the requirements in this Permit Section and Permit Sections 9.2.4.6 and 9.2.5.6 which includes all additional sampling locations, methods, and procedures identified as necessary during the records review and structural assessment (40 CFR § 264.112(c))."
178	Part 9, Section 9.2.4.3	NMED rewrites the rule at 40 CFR §264.112(b)(4) in a manner that omits an important clause thus making the requirement more stringent than and inconsistent with	Pages 74-75, Lines 34-36 and Lines 1-2: Suggest changing the text to read: "The Permittees shall decontaminate or remove all equipment (e.g., moveable equipment,

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		its existing rules. 40 CFR §264.112(b)(4) includes the option to remove hazardous waste residuals and contaminated equipment to meet the closure standard. The previously submitted closure plans contained in LANL's permit applications included and described the waste removal option as a significant closure procedure. In addition, the included reference to 40 CFR §264.114 specifically addresses the disposal of contaminated equipment (see also NMSA 1978, 74-4-4D).	ventilation systems, secondary containment pallets, transportainers) and structures (e.g., walls, floors, ceilings, stairs, railings) associated with the permitted unit being closed in accordance with the requirements for Closure Plans in 40 CFR §264.112(b)(4) and §264.114, which are incorporated herein by reference." from: "The Permittees shall decontaminate all equipment (e.g., moveable equipment, ventilation systems, secondary containment pallets, transportainers) and structures (e.g., walls, floors, ceilings, stairs, railings) associated with the permitted unit being closed in accordance with the requirements for Closure Plans in 40 CFR §§ 264.112(b)(4) and 264.114, which are incorporated herein by reference."
179	Part 9, Section 9.2.4.3	The permit condition listing pressure washing and steam cleaning as the only available methods for decontamination of structure and equipment is not based in NMED rules and unnecessarily precludes other types of appropriate decontamination procedures. Washdown procedures (e.g., wiping or use of mops) may be appropriate decontamination procedures for permitted units to avoid excessive waste production, potential releases, or worker exposure to radiation. This condition also precludes the facility from making cases for alternative decontamination procedures in the closure plans and sampling and analysis plans to be submitted to NMED for approval under the terms of this Permit. The sentence should be revised to allow additional decontamination procedures. The statement also requires all structures and equipment be decontaminated regardless of its condition and whether it will be retained for future use of disposed of.	Page 75, Lines 3-5: Suggest: "The Permittees shall decontaminate all structures and equipment determined to require decontamination by pressure washing, steam cleaning, or a wash down process using methods described in the detailed closure plans submitted for each permitted unit." from: "The Permittees shall decontaminate all structures and equipment by pressure washing or steam cleaning."
180	Part 9, Section 9.2.4.3	Suggested change allows for the situation in which not all equipment will be decontaminated as allowed by 40 CFR §264.114. Without this change, NMED rewrites existing rules to result in a standard that is more stringent than, and inconsistent with the existing rule (see also NMSA 1978, 74-4-4D).	Page 75, Lines 5-9: Please change the sentence to read: "The Permittees shall ensure that any structures or equipment that cannot or will not be decontaminated are removed (or containerized) in accordance with 40 CFR § 264.114, which is incorporated herein by reference, and managed in compliance with all applicable waste management regulations (Permit Section 9.2.4.5)." from: "The Permittees shall ensure that washing activities are repeated until decontamination is verified in accordance with

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			Permit Section 9.2.4.6 (40 CFR § 270.32(b)). The Permittees shall ensure that any structures or equipment that cannot be decontaminated are removed (or containerized) in accordance with 40 CFR § 264.114, which is incorporated herein by reference, and managed in compliance with all applicable waste management regulations (Permit Section 9.2.4.5)."
181	Part 9, Section 9.2.4.4	An editorial change is needed to allow the option of disposing of contaminated equipment as hazardous waste prior to the decontamination process.	Page 75, Lines 13-16: Suggest changing the text to read: "The Permittees shall dispose of any equipment, structures, decontamination waste, and environmental media associated with the permitted unit being closed that could not <u>or will not</u> be decontaminated in accordance with this Permit Part and 40 CFR §264.114, which is incorporated herein by reference.
182	Part 9, Section 9.2.4.5	Suggested change is consistent with the regulation.	Page 75, Lines 25-26: Suggest editing the sentence to include the term "<u>may</u>" instead of "shall" as contained in the referenced regulation. "By removing any hazardous wastes or hazardous waste constituents during partial or final closure, the Permittees may become a generator of hazardous waste."
183	Part 9, Section 9.2.4.6	The draft Permit includes a verification sampling program including requirements for sampling frequency, sample locations, and removal of contaminated materials. This sampling program is directed toward demonstration of clean closure. Many of the permitted units at TA-54 are co-located with corrective action units and may be located on top of soil that has been contaminated by releases from corrective action units. For units where releases have co-mingled with releases from SWMUs and AOCs, it is unlikely that the conditions for clean closure can be met. As indicated in Section 9.1 of the draft Permit, closure of such units can be coordinated with cleanup of the corrective action units using alternative closure requirements established under 40 CFR §264.110(c). Section 9.2.4.6 should be revised so that the verification sampling requirements apply only to sites undergoing	Page 75, Lines 28-32: Suggest adding the phrase "<u>for permitted units that are clean closing</u>" to the first sentence.

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		clean closure. Verification sampling requirements for other sites would be established in coordination with corrective actions for SWMUs and AOCs as part of alternative closure requirements established under 40 CFR §264.110(c), which must be protective of human health and the environment.	
184	Part 9, Section 9.2.4.6	The beginning phrase should be modified to include the potential for waste disposal without decontamination.	Page 75, Lines 28-32: Suggest that the phrase "After decontamination and removal" be revised to "<u>After decontamination and/or removal</u>"
185	Part 9, Section 9.2.4.6	The requirement to sample to prescribed criteria in terms of area for loading and storage areas does not account for the sampling sites and factors that would be identified during the records and structural assessment included in Section 9.2.4.2. Additionally, the requirement does not account for differences between the affected units (e.g., size, materials of construction, operational history) that would potentially affect the need for this type of sampling. The application of a prescribed sampling grid also does not allow for the use of other sampling approaches (e.g., judgmental sampling) that may be determined to be more appropriate for sampling at any given waste management unit. Therefore, LANL proposes a verification sampling criteria that would allow for a wider range of potential sampling solutions to be presented in SAPs for NMED approval. This can be based upon a performance-based criteria such as methods included in EPA policy and SW-846.	Pages 75-76, Lines 33-34 and Lines 1-3: Suggest replacing paragraph with "<u>The Permittees shall collect samples for verification using sample methodologies from SW-846 or other approved methods and will include descriptions of these in the closure plan SAPs.</u>" from: "The Permittees shall collect one sample every 250 square feet in loading and unloading zones, and one sample every 500 square feet on walls and floors of the permitted unit. The type of sample collected (e.g., wash-water, swipe, chip, core, soil) shall depend on the material being sampled and the constituents being analyzed. The Permittees shall provide the rationale for proposing the types of samples to be collected."
186	Part 9, Section 9.2.4.6	Suggested change allows for the situation where the sampling locations outlined in the SAP prior to the structural assessment and records review do not need to be changed after the review.	Page 76, Lines 4-6: Please change the text to read: "<u>The Permittees shall collect samples in accordance with the SAP. Locations of the samples shall be identified prior to closure and will include locations where stains, cracks, gaps, or other damaged conditions are identified during the structural assessment and records review as well as where the Operating Record indicates any instances of spills or releases</u>." from: "The Permittees

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			shall collect samples at locations identified during the records review and structural assessment where stains, cracks, gaps, or other damaged conditions are present as well as where the Operating Record indicates any instances of spills or releases."
187	Part 9, Section 9.2.4.6	The condition should be revised to include the option of removing contaminated material as waste.	Page 76, Lines 8-9: Suggest inserting " or removed" after "resampled."
188	Part 9, Section 9.2.4.6	The term "re-washed" is based on the premise that pressure washing or steam cleaning will be the only decontamination methodology approved in the unit specific closure plans.	Page 76, Line 9: Suggest substituting the term "re-cleaned" for "re-washed."
189	Part 9, Section 9.2.4.6	The condition should be revised to include the option of removing contaminated material as waste.	Page 76, Line 10: Suggest inserting the text "or the equipment or surfaces are removed as waste" after "attained".
190	Part 9, Section 9.2.4.6	The condition as written does not allow any alternative methodologies approved in closure plans. The suggested change is consistent with closure activities that have been conducted at LANL previously and have been approved by the Department. Decontamination above approximately fifteen feet and over head (ceiling) would increase the number of health and safety hazards associated with decontamination activities and provides no added protection to human health and the environment overall.	Page 76, Lines 16-18: Please change the text to read: "At container storage units located within buildings, the Permittees shall decontaminate the entire designated storage unit, including at least the floors and walls up to 1 foot above the height of storage within the unit unless the results of the records review and structural assessment of Section 9.2.4.2 of this Permit or conditions contained in the unit specific closure plan indicate this is not necessary for portions of the unit. All decontaminated surfaces shall be included in the sampling area grid locations (40 CFR § 270.32(b)(2))." from: "At container storage units, the Permittees shall decontaminate the entire room, including but not limited to walls, floors, ceilings, and include these sites in the sampling area grid locations (40 CFR § 270.32(b))."
191	Part 9, Section 9.2.4.6	Editorial change to specify purpose of storage activities and prevent confusion with circumstances involving storage of non-mixed radioactive only waste.	Page 76, Lines 19-21: Please change the second use of the term "radionuclides" to "…where mixed waste was stored."
192	Part 9, Section 9.2.4.6	Asphalt is likely to have trace quantities of organic compounds or metals even if they are not waste contaminants. This sentence should be changed to limit the significance of hazardous constituents to those that	Page 76, Lines 27-29: Suggest editing the sentence "If verification soil samples detect contamination associated with hazardous wastes managed at the

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		can be traced to waste management activities.	permitted unit, the Permittees shall remove all of the asphalt (or asphaltic concrete) and follow the soil contamination investigation procedures identified in Permit Section 9.2.4.7."
193	Part 9, Section 9.2.4.6	Suggested change gives LANL the option to clean close container storage units prior to building demolition.	Page 76, lines 22-24: Please change the text to read: "If the Permittees plan to demolish the permitted structure or building, then an alternate sampling approach can~~shall~~ be proposed in the SAP. In this case, the Permittees shall follow the soil verification sampling procedures identified in Permit Section 9.2.5.6 (40 CFR § 270.32(b)(2))."
194	Part 9, Section 9.2.4.7	The paragraph does not address the closure of container storage units that are within enclosed buildings where the likelihood is very low that hazardous waste or constituents would be released to soil. It also does not address the potential for background soil contamination that has not been released from the waste management unit subject to the closure plan.	Page 76, Lines 31-36: Suggest editing the paragraph to include: "The Permittees must determine the extent of any releases of contamination from the permitted unit detected during closure activities. If contamination is detected within a container storage unit located within a building, investigation activities will be restricted to the unit unless further information or the records review and structural assessment of section 9.2.4.2 indicates hazardous waste may have migrated outside the unit. The unit will undergo additional decontamination activities or material will be removed until contamination is no longer detected, the unit meets the decontamination criteria, or it is established that the contamination is not due to waste management activities at the unit but is part of historical contamination. If waste related contamination is indicated or detected outside of indoor container storage units, the Permittees shall determine the extent of the contamination by collecting and analyzing samples of the surrounding area, and if necessary, surrounding and underlying soils. The Permittees shall collect additional samples if soil contamination is detected in order to determine both the lateral and vertical extent of contamination of any release from the permitted unit. The need for sampling and analysis of surrounding soil will take into account the potential for historical contamination associated with co-located releases of hazardous constituents not associated with the waste management activities of the permitted unit." from: "The Permittees must determine the extent of any releases of contamination detected during closure activities if contamination is discovered. If contamination is discovered at any sampling point, the Permittees shall determine the extent of the

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			contamination by collecting and analyzing samples of the surrounding and underlying soils. The Permittees shall collect additional samples, if soil contamination in these samples is detected, in order to determine both the lateral and vertical extent of contamination of any release from the permitted unit (40 CFR § 270.32(b)).”
195	Part 9, Section 9.2.4.8	The permit condition requires removal of all contaminated media if samples collected beneath any permitted unit indicate contamination above corrective action levels. For units where releases have commingled with releases from SWMUs or AOCs, it is unlikely that the conditions for clean closure can be met. As indicated in section 9.1 of the draft Permit, closure of such units can be coordinated with cleanup of the corrective action units using alternative closure requirements established under 40 CFR §264.110(c).	Page 77, Lines 2-6: Suggest adding a sentence to the end of the paragraph: “<u>In the event that the contaminated media is associated with permitted units that cannot achieve clean closure and meet the conditions of 40 CFR §264.110(c), the remediation of the contaminated media will be coordinated with corrective action activities in accordance with the regulation.</u>”
196	Part 9, Section 9.2.5	The paragraph should include a sentence listing the permitted units that would be affected by the closure requirements of this section for clarity.	Page 77, Line 10: There are no specific language changes associated with this comment. Clarity is requested from the HWB.
197	Part 9, Section 9.2.5.6	The permit condition as written requires verification sampling to determine whether environmental media at closing permitted units indicate waste contamination. For units where releases have commingled with releases from SWMUs or AOCs, it is unlikely that the sampling will be able to completely provide this information. As indicated in section 9.1 of the draft Permit, closure of such units can be coordinated with cleanup of the corrective action units using alternative closure requirements established under 40 CFR §264.110(c).	Suggest modifying the sentence to read: “After decontamination and removal as discussed in Permit Section 9.2.5.3, the Permittees shall conduct the following verification sampling activities <u>for permitted units that will be clean closed to</u> determine if environmental media at the permitted unit has been contaminated as a result of waste management activities.”
198	Part 9, Section 9.3	Part 9 does not set specific closure verification standards other than references to demonstrate constituents are not present (e.g., page 79, line 11). Past closure plans submitted by LANL and, in some cases, approved for closures have set a list of decontamination criteria that can be used where decontamination analysis has required some closure	Page 78: Suggest adding: “<u>Successful decontamination of the TA-16 OB units will meet a minimum of one of the following criteria:</u> ▪ <u>No detectable RCRA-regulated constituent residues from the management of treated authorized RCRA-regulated wastes are</u>

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		flexibility.	identified in samples collected during closure activities. ▪ Analytical results of samples collected during decontamination verification activities identify no statistically significant concentrations of RCRA-regulated constituents above baseline/background data. ▪ Detectable concentrations of RCRA-regulated constituents in samples collected during verification activities are at or below levels agreed upon with the NMED to be protective of human health and the environment, based on the results of risk assessment methods. - Comparison of the analytical results to the appropriate NMED Soil Screening Levels (SSLs) (NMED, 2006) and/or the LANL Ecological Screening Levels (ESLs) (LANL, 1999), or most current applicable document(s). If the result is below the SSL/ESL, the equipment/soil/surface will be considered free of contamination. ▪ Detectable concentrations of RCRA-regulated constituents that cannot be removed or decontaminated to acceptable levels, as described above, will remain provided that these RCRA-regulated constituents do not pose an unacceptable risk when combined with technical or administrative control measures agreed upon with the NMED. - Assessment of residual (i.e., above the SSL, ESL) contamination levels using an occupational risk scenario."
199	Part 9, Section 9.4	The 90 day submittal of closure reports does not match the 60 days for certification requirement in Section 9.5 or 40 CFR §264.115 when the certification is part of the final report.	Page 79, Line 29: Suggest replacing "90 days" with "60 days".
200	Part 9, Section 9.6	The description of the applicable units as MDAs is incorrect. MDA refers to descriptors used for the portions of Areas G, H and L subject to the corrective action program (as defined in numerous LANL corrective action program documents since the 1990	Page 80, Line 14: Please replace the phrase "Material Disposal Areas (MDAs) G, H, and L" with "Technical Area 54 Areas G and L Landfills."

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		SWMU Report). As corrective action units, these are not subject to the draft Permit. The correct terminology is the "Area G Landfill" and "Area L Landfill" for those regulated units subject to the Permit. These descriptions and unit designations have been included in several prior closure plan submittals to NMED. NMED correspondence also indicates that Shaft 9 at MDA H has already been included with corrective action activities for MDA H and thus should not be included here.	
201	Part 9, Section 9.6	Section III.W.1 of the Consent Order specifies that closure and post-closure care requirements are to be addressed by the Permit and not by the Consent Order. As currently written, Section 9.6 appears to indicate that MDAs G, H, and L are subject to both closure and post-closure care requirements under the Permit and corrective action requirements of the Consent Order. The revisions to the text describe how corrective actions for MDAs G, H, and L under the Consent Order will be coordinated with closure of the landfill units at TA-54 Areas G, H, and L under the Permit.	Page 80, Lines 14-38: Section 9.6 should be revised for consistency with the Consent Order and to better describe how closure of regulated units at TA-54 will be coordinated with corrective actions under the Consent Order. The first four paragraphs of Section 9.6 (page 80, lines 14–38) should be replaced as follows: "<u>The landfill units at TA-54 Areas G, H, and L are no longer accepting hazardous waste and must undergo closure. These units are situated among solid waste management units (SWMUs) and areas of concern (AOCs), releases have occurred, and both the landfill units and one or more of the SWMUs or AOCs are likely to have contributed to the releases. In accordance with 40 CFR § 264.110(c), incorporated herein by reference, the TA-54 landfill units shall be closed under alternative closure requirements established under the Consent Order rather than the closure requirements of 40 CFR 264 Subparts G and N. The alternative closure requirements for these landfill units shall be established using the remedy selection process contained in Section VII.D of the Consent Order. The Permittees are required, in accordance with the Consent Order, to submit to the Department for approval a Corrective Measures Evaluation Report (CME) for MDAs G and L on September 12, 2008 and January, 18, 2008, respectively. A Corrective Measures Study Report for MDA H was previously submitted and approved by the Department on October 31, 2007. The Department shall select remedies and issue a statement of basis for the selected remedies for MDAs G, H, and L in accordance with Section VII.D.7 of the Order. The remedy selection is subject to public</u>

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			comment in accordance with 20.4.1.901 NMAC and as described in Section VII.D.7 of the Order. The selected remedies for MDAs G, H, and L that will achieve closure of the TA-54 landfill units shall be protective of human health and the environment and satisfy the closure performance standard of 40 CFR §§ 264.111(a) and (b), incorporated herein by reference. Upon the Department's selection of the remedies for MDAs G, H, and L, the Permittees shall be required to submit a Corrective Measures Implementation (CMI) Work Plan to the Department for approval on a schedule established by the Department pursuant to the Consent Order. The CMI Work Plans shall fulfill the requirements for Closure Plans and Post-Closure Plans specified in 40 CFR §§ 264.112 and 264.118, respectively, which are incorporated herein by reference. The closure and post-closure plan requirements for the landfill units at TA-54 Areas G, H, and L shall be fulfilled by the CMI Work Plans for MDAs G, H, and L, respectively. Following approval of the CMI Work Plans by the Department, this permit shall be modified to incorporate the closure and post-closure care requirements for the landfill units. Following implementation of the CMI Work Plans, the Permittees shall prepare Remedy Completion Reports in accordance with Section VII.E.6.a of the Consent Order and shall submit these reports to the Department for approval on a schedule established by the Department pursuant to the Consent Order. The closure certification requirements for the landfill units at TA-54 Areas G, H, and L under 40 CFR § 264.115, incorporated herein by reference, shall be fulfilled by the Remedy Completion Reports for MDAs G, H, and L, respectively." The text currently reads: "The disposal or landfill units, Material Disposal Areas (MDAs) G, H, and L, are no longer accepting hazardous waste and must undergo closure. The first phases of closure will be conducted through the corrective measures evaluation and implementation process outlined in Section VII of the March 1, 2005 Compliance Order on Consent (Order). The Permittees are required, in accordance with the Order, to submit to the Department for approval a Corrective Measures Evaluation Report (CME) for MDAs G, H (submitted), and L on September 12, 2008 and January, 18, 2008, respectively. The Department will select remedies and issue a statement of basis for the selected remedies for each closed disposal or

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			landfill unit in accordance with Section VII of the Order. The remedy selection is subject to public comment in accordance with 20.4.1.901 NMAC and as described in Section VII.D.7 of the Order. The selected remedies that will achieve closure of MDAs G, H, and L shall be protective of human health and the environment and attain the appropriate clean-up levels as specified in Permit Part 11 (*Corrective Action*). Upon the Department's selection of the remedies for closure of each of the disposal or landfill units, the Permittees shall be required to submit a Corrective Measures Implementation (CMI) Work Plan to the Department for approval on a schedule established by the Department. The CMI Work Plan for each disposal or landfill unit shall satisfy the requirements for Closure Plans specified in 40 CFR § 264.112, which is incorporated herein by reference. All inspection, monitoring, and operation and maintenance (O & M) of remediation systems installed as part of CMI Work Plan (Closure Plan) implementation shall be proposed in the Post-Closure Care Plans for MDAs G, H, and L as described in Permit Part 10 (*Post-Closure Care*). Upon approval of the Closure Plan, the Department will establish a due date for the Permittees' submission of a Closure Report addressing the results of the execution of the Closure Plan. The selected remedies that will achieve closure of MDAs G, H, and L shall meet the human health and ecological risk cleanup levels referenced in Permit Sections 11.4 and 11.5."
202	Part 10, Section 10.1	Add the term "clean" to the sentence for clarity.	Page 81, Line 3: Suggest editing the sentence to read: "If, upon closure of a permitted unit, the Permittees cannot achieve the <u>clean</u> closure performance standards described in Permit Part 9…"
203	Part 10, Section 10.1	Typographical error in citation.	Page 81, Line 14: Add the following to the citation: "(40 CFR §264.117<u>(a)</u>(2)(i) and (ii))".
204	Part 10, Section 10.1	This regulatory requirement could conflict with Permit Section 9.6. If the Area G and L Landfills are subject to NMED selection of remedies prior to the decision to close in place, then this condition is dependent on	Page 81, Line 15-17: Suggest changing the sentence to read: "The Permittees shall submit an application for a Post-Closure Care Permit no later than 90 calendar

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		NMED's decision point rather than the Permittees. Section 9.6 also seems to say that the CMI Work Plan will meet the requirements for a Closure Plan and therefore the review process for that document by NMED will impact the 90 day application submittal requirement as those activities would need approval prior to inclusion in a Post-Closure Care Permit.	days from the date that the Permittees determine that the permitted unit will be closed with waste in place, in accordance with 40 CFR §§ 264.117 through 120, unless the Department approves a CMI Work Plan submitted under Section 9.6 of this Permit."
205	Part 10, Section 10.1	Adding a reference to the post-closure care permit application requirements should help differentiate between the requirement for a post-closure care permit and the Post-Closure Care Plan referenced elsewhere in this section.	Page 81, Line 17: Please add the sentence: "The application shall be prepared in accordance with 40 CFR §270.28."
206	Part 10, Section 10	Typographical error.	Page 84, Line 13: Please change the line to read: "THIS PAGE IS INTENTIONALLY LEFT BLANK"
207	Part 11, Throughout	Many permit conditions in this section appear to blur the line between units or actions subject to the Permit and those subject to the Consent Order. The distinction should be made clear; but if not, the requirements of the Consent Order and the Permit must be the same to protect Permittees from enforcement for failing to meet conflicting requirements.	There are no specific language changes associated with this comment.
208	Part 11, Section 11.2	The Consent Order contains a provision for force majeure extensions to the corrective action requirements but the draft Permit does not. In the event that a force majeure condition applies that would impact the schedule or procedures for permitted units coordinated with corrective action, a provision to allow NMED review equal to that in the Consent Order is needed.	Page 85, Line 29: Please add the sentence: "In the event that coordinated corrective actions include delays or performance complications subject to Section III.H (Force Majeure) of the Consent Order, such event will be evaluated as allowed under the provisions of that section for the purposes of compliance with this Permit."
209	Part 11, Section 11.2.1	Reference to Table P-1 is not correct.	Page 86, Line 12: Suggest replacing "Attachment P, Table P-1" with "Attachment O, Table O-1."

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210	Part 11, Section 11.3.1.1	Section IV.A.1 of the Consent Order states that "Implementation of the groundwater monitoring requirements of this Consent Order will fulfill the groundwater monitoring requirements of the Hazardous Waste Regulations, 20.4.1.500 NMAC (incorporating 40 C.F.R. Part 264, Subpart F)." Section 11.3.1.1 should be revised to indicate that detection monitoring requirements of 40 CFR §264.98 will be fulfilled by the groundwater monitoring performed pursuant to the Consent Order.	Page 86, Lines 23-26: Please add the sentence: "As stated in Section IV.A.1 of the Consent Order, implementation of the groundwater monitoring requirements of the Consent Order will fulfill the requirements of 40 CFR, Part 264, Subpart F for the duration of the Consent Order."
211	Part 11, Section 11.3.1.1	The suggested additions to the sentence provide greater clarity regarding the requirement to provide notice to the Department of any new detections of hazardous waste and hazardous constituents in ground water at any location within seven days of detection. Although the previous paragraph references 40 CFR §264.98, the sentence should make it clear that the statistical significance of the detection monitoring has been addressed as discussed in the introduction to 40 CFR §264.98(g). In addition, the groundwater monitoring requirements contained in this Permit should not extend beyond the applicable units to avoid duplicative requirements between the Permit and other monitoring points. The requirement to notify of any new detections of groundwater contaminants within seven days is not consistent with the reporting requirements included in the August 2007 Consent Order modification. New section IV.A.3.g of the Consent Order requires reporting within 15 days. The requirement should be changed to match the Consent Order modification.	Page 86, Line 27-28: Please modify the sentence at Line 27 as follows: "The Permittee shall notify the Department~~,~~ in writing~~,~~ of any new statistically significant evidence of detection~~s~~ of hazardous waste and hazardous constituents in groundwater at any location monitoring points of compliance for subject hazardous waste management units within ~~seven~~ fifteen days of detection."
212	Part 11, Section 11.3.1.2	Section IV.A.1 of the Consent Order states that "Implementation of the groundwater monitoring requirements of this Consent Order will fulfill the groundwater monitoring requirements of the Hazardous Waste Regulations, 20.4.1.500 NMAC (incorporating	Pages 86-87, Line 35 and Lines 1-3: Suggest adding the sentence: "As stated in Section IV.A.1 of the Consent Order, implementation of the groundwater monitoring requirements of the Consent Order will fulfill the requirements of 40

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		40 C.F.R. Part 264, Subpart F)." Section 11.3.1.2 should be revised to indicate that compliance monitoring requirements of 40 CFR §264.99 will be fulfilled by the groundwater monitoring performed pursuant to the Consent Order.	CFR, Part 264, Subpart F for the duration of the Consent Order."
213	Part 11, Section 11.3.2	Section IV.A.1 of the Consent Order states that "Implementation of the groundwater monitoring requirements of this Consent Order will fulfill the groundwater monitoring requirements of the Hazardous Waste Regulations, 20.4.1.500 NMAC (incorporating 40 C.F.R. Part 264, Subpart F)." The reporting requirements discussion in Section 11.3.2 should be revised to indicate that compliance with the requirements of the Consent Order will be sufficient.	Page 87, Line 8: Suggest replacing the phrase "in accordance with Permit Section 11.12" with "in accordance with Section XI.D of the Consent Order for the duration of the Consent Order."
214	Part 11, Section 11.3.2	Typographical error.	Page 87, Line 5: Delete extra phrase "the Department."
215	Part 11, Section 11.3.3	Section 11.2 specifically identifies the scope of any corrective actions under the Permit. This section should be changed to clarify that these conditions are limited to those actions covered by this Permit.	Page 87, Lines 14-25: Please add the phrase "for permitted units or any other circumstances as described in Section 11.2 of this Permit" to the end of the first sentence in section 11.3.3. Suggest changing the sentence on line 18 to read: "In the event that hazardous waste or hazardous constituents subject to Part 11 of this Permit migrate beyond the Facility boundary…"
216	Part 11, Section 11.3.3	Section 1.9.11 of the draft Permit addresses planned changes to the Facility that may result in non-compliance. As discovery of a release does not meet this criteria, the reference to this section appears to be incorrect.	Page 87, Line 14: Suggest replacement of the reference to Section 1.9.11.
217	Part 11, Section 11.4	The condition regarding cleanup levels for structures and equipment decontaminated during closure appears duplicative of the conditions in Part 9 of the draft Permit.	Page 88, Line 30: Suggest deleting the sentence: "Cleanup levels for structures and equipment, decontaminated during closure of permitted units, shall be to concentration levels less than the detection limits established in EPA SW-846 for each analytical method used."

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218	Part 11, Section 11.4.1.2	Section 11.2.1.1 does not exist.	Page 89, Line 21: Suggest replacing the reference to section 11.2.1.1 with section 11.4.1.1.
219	Part 11, Section 11.4.2.1	The draft Permit states that a soil cleanup level based on a dilution attenuation factor (DAF) of 1 may be appropriate to achieve clean closure where soil to groundwater migration is a concern. The applicability of the DAF screening levels to sites at LANL is limited and LANL recommends modifying the proposed permit language to limit their use to appropriate applications. Specifically, the term "where soil to groundwater migration is a concern" is overly vague and should be replaced with more precise language. The Department-approved methods for calculating DAF soil cleanup levels are presented in the Department's Technical Background Document for Development of Soil Screening Levels. These methods incorporate a number of conservative assumptions that are representative of conditions that are very favorable for migration of contaminants from soil to groundwater. For most contaminants, these calculations result in DAF soil screening levels that are orders of magnitude lower than the human-health-risk-based screening levels based on non-groundwater exposure pathways. Inappropriate use of these screening levels at sites where there is low potential for migration to groundwater, therefore, would potentially result in cleanup of significant amounts of soil contamination that poses no unacceptable risk to human health. The physical conditions at most LANL sites are not consistent with the conditions assumed for calculation of the DAF screening levels. Specifically, the methods described in the Department's background document assume an infinite source of contamination and a uniform contaminant distribution from the surface to the water table (i.e., conditions where migration from	Page 89, Lines 33-35: The second sentence of Section 11.4.2.1 should be revised as follows: "The Department may determine that a dilution attenuation factor of 1~~one~~, as calculated using the Department-approved methods, for contaminated soils is appropriate to achieve clean closure, at sites where migration of contaminants through the soil column to groundwater has occurred ~~where soil to groundwater migration is a concern~~."

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		soil to groundwater is actually occurring). These assumptions are not appropriate for any site where the vertical extent of contamination is bounded in the vadose zone, which is the case at almost all sites investigated at LANL so far. The methods also assume a receptor well (point of exposure) at the downgradient edge of the source, which is inappropriate for most locations at LANL. Further, the method presented in the Technical Background Document uses an infiltration rate of 0.13 m/yr, which may be two orders of magnitude higher than the actual infiltration rate at most mesa-top locations at LANL. The DAF screening levels, therefore, are overly conservative and are much lower than what would be needed to be protective of groundwater migration for most locations at LANL.	
220	Part 11, Section 11.4.2.2	Editorial comment to add the term "default" as contained in Section VIII.B.1.a of the Consent Order.	Page 90, Line 13: Suggest editing sentence to read: "…is either a <u>default</u> concentration of 1 milligram per kilogram…"
221	Part 11, Section 11.4.3	To create consistency with the titles for the other subsections within Section 11.4, "Cleanup Levels" should be added to the title of this section.	Page 90, Line 18: Please change the title of the section to: "Surface Water <u>Cleanup Levels</u>"
222	Part 11, Section 11.4.3	The proposed change is necessary to clarify that for corrective actions involving surface waters, cleanup levels for surface waters must be based on surface water quality standards, WQCC regulations and the Clean Water Act.	Page 90, Lines 19-21: Insert at the beginning of line 19: "<u>Surface water cleanup levels shall be based on "Surface water quality standards" outlined in the Clean Water Act</u>".
223	Part 11, Section 11.8.5.1.iii	The requirement that the Permittees provide an additional summary of information beyond that provided in the unit-specific Investigation Work Plans broadens the reporting requirements that have been incorporated in this draft Permit for corrective action of releases from permitted units. The historical document summary incorporates similar requirements of the	Page 95, Lines 16-21: Please delete this section.

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		Consent Order, but these requirements are not appropriate for the scope of corrective actions under the Permit. Specifically, the Consent Order addresses corrective action for historical release (where this type of information is appropriate), while the Permit addresses corrective action for new releases and newly discovered releases from the permitted units. The requirement is also inconsistent with the stated goals of the background presentation for Work Plans as included in Section 11.12.2.5 of this Permit ("This section shall identify potential receptors, including groundwater, and include a brief summary of the type and characteristics of all waste and all contaminants managed or released at the site, the known and possible sources of contamination, the history of releases or discharges of contamination, and the known extent of contamination.") The information provided with the Work Plans will include the relevant historical information and assessment of potential contaminant releases. In addition, this requirement is not included in the general corrective action requirements for permitted units pursuant to 40 CFR §264.100. LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	
224	Part 11, Section 11.9	The draft Permit indicates that the Department will review all plans, reports, and other documents required under the Permit and (1) approve the document, approve it with modifications or direction, or (2) disapprove it or disapprove the document and require modifications necessary for approval. Approved documents then become incorporated as an enforceable part of the Permit (see pg. 103, line 38, pg. 104, line 6). NMED's language raises the following three concerns: First, approval of such documents would constitute an agency modification to the Permit without following RCRA permit modification and appeal procedures.	Page 103, Lines 25-37: Suggest new language at Section 11.9, Lines 27-32: "<u>If the Department (1) approves the submittal with modification, or (2) disapproves a submittal, including a disapproval with modifications, the Department will notify the Permittees in writing the reason for its decision, include any necessary modification(s), and specify a due date for submission of a revised submittal. Unless dispute resolution is invoked under Section 1.13, the Permittees shall revise the submittal to incorporate all modifications to the Department for approval within the specified time period</u>." The text currently reads: "If the Department approves the document, it

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		Unlike modification procedures, the language does not offer the Permittees an opportunity to respond to deficiencies identified by the Department including approvals with modification or direction and disapprovals with modifications necessary for approval. Instead, it appears that any directed change would result in a modification to the Permit without affording the Permittees remedies that they are otherwise entitled to under a permit. This procedure, in turn, would deny LANL due process and is inconsistent with RCRA appeal process. Second, it is unclear what substantive difference exists between an approval "with modification" and an approval "with direction;" therefore, to streamline this section the term "approval with direction" has been deleted. If a substantive difference exists, other permit terms would need to be changes for consistency (e.g., line 29, the addition of the term "or direction)". Third, the requirement to submit a revised work plan within 30 days raises the same due process issues as above, and does not afford the Permittees an opportunity to respond to deficiencies or otherwise a remedy to address requirements imposed by the Department. To address the above concerns, LANL has revised this section to streamline and clarify requirements.	will notify the Permittees in writing. If the Department approves the document with modifications, the Department will notify the Permittees in writing of the necessary modifications, and the reasons for the modifications. If the Department disapproves a document, it will notify the Permittees in writing of the disapproval and the deficiencies in the document or other reasons for the disapproval."
225	Part 11, Section 11.9	In some instances, differences between the conditions of Part 11 and the NMED approved Work Plans or other submitted documents addressing corrective action for permitted units may develop. Examples would potentially include (but not be limited to) method detection limits approved as required by Section 11.10.3 or the use of alternate levels of analytical sampling protocols between reports and facility records as included in Section 11.10.3.1.iv. LANL proposes a general comment that would address the issue of these	Page 103, Line 37: Suggest adding the sentences: "<u>In some cases, conditions approved by the Department in the work plan or other documents may replace or modify the corrective action procedures for permitted units contained in Part 11 of this Permit. Compliance with the conditions of those approved documents will suffice to meet the requirements of this Part where differences exist.</u>"

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		differences and allow those approved conditions to replace the conditions in the Permit.	
226	Part 11, Section 11.9	The draft Permit indicates that the Department will not necessarily approve documents submitted by the Permittees, including Investigation Reports, Monitoring Reports, Interim Measures Reports, Corrective Measures Implementation Reports, Remedy Completion Reports, or other documents submitted under 20.4.1 NMAC. This statement appears to contradict earlier language in Section 11.9 which states that all documents prepared under the Permit must be approved by the Department (pg. 103, lines 22-25).	Page 104, Lines 3-8: Section 11.9 should be revised to resolve this apparent conflict.
227	Part 11, Section 11.10.2.13	The draft Permit states that all containers used for storage of investigation derived waste at satellite accumulation areas or transfer stations must be approved by the Department. The requirements for maintenance of generator waste sites are contained at 40 CFR §262.34. In addition, the language inappropriately limits the type of generator unit in which waste may be stored. The requirements for transfer facilities (most closely resembling "transfer stations") are contained in 40 CFR Part 263. The scope of this draft Permit does not extend to these parts of the RCRA regulation but is limited to provisions from 40 CFR Parts 264, 266 and 268 as described in Section 1.4, "Effect of Permit". LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	Page 118, Lines 11-13: Please delete: "at satellite accumulation areas or transfer stations" and "approved by the Department."
228	Part 11, Section 11.10.2.13	The draft Permit states that the Department will approve the methods for characterization and disposal of investigation derived waste prior to removal from storage sites. Characterization of remediation waste is sufficiently addressed in Attachment C, Section C.3.3 of the draft Permit. The regulation of off-site disposal of remediation waste is not within the purview of the	Page 118, Line 15: Please delete the sentence: "The methods for waste characterization and disposal of IDW shall be approved by the Department prior to removal from the temporary storage area."

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		draft Permit and on-site disposal of hazardous remediation waste is not allowed by this draft Permit. LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	
229	Part 11, Section 11.10.2.8.iv	Suggest change in spelling to make this use of the term consistent with the remainder of the section.	Page 114, Line 28: Replace "rinseate" with "rinsate."
230	Part 11, Section 11.10.3	The draft Permit requires use of the most recent EPA and industry-accepted extraction and analytical methods for chemical analyses. The use of extraction and analytical methods approved by EPA and published in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (SW-846) is more appropriate. SW-846 was specifically developed by EPA to provide analytical methods needed to demonstrate compliance with RCRA. These methods are approved by the U.S. Environmental Protection Agency for obtaining data to satisfy the requirements of 40 CFR Parts 122 through 270 promulgated under RCRA, as amended. SW-846 presents the state-of-the-art in routine analytical tested adapted for the RCRA program.	Page 119, Lines 20-24: Please insert a reference to SW-846 and strike the last sentence.
231	Part 11, Section 11.10.3	The permit condition requiring that detection limits for analytical methods be less than applicable background, screening, and regulatory cleanup levels is not an appropriate condition for this permit. Permittees cannot control the detection limits and should not be subject to enforcement for failure to meet this condition. The comment above addresses the use of SW-846 to demonstrate the Permittees compliance with RCRA; Permittees compliance with the requirements of SW-846 should be protective of human health and the environment. LANL did not request this condition in its permit application, it is not a regulatory requirement,	Page 119, Line 27: Please delete: "The detection limits for each method shall be less than applicable background, screening, and regulatory cleanup levels"

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		nor is their support for it in the administrative record.	
232	Part 11, Section 11.11.6	The draft Permit states that all well abandonment must be conducted in accordance with 19.27.4 NMAC. The well abandonment regulations are issued by the New Mexico Office of the State Engineer. The scope of this draft Permit does not extend to these regulations but is limited to provisions from 40 CFR Parts 264, 266 and 268 as described in Section 1.4, Effect of Permit. LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D). The section of the negotiated Consent Order that was apparently used as a basis for this section of the draft Permit does not include this condition.	Page 142, Line 31: Please delete the sentence that reads: "All well abandonment must be conducted in accordance with 19.27.4 NMAC."
233	Part 11, Section 11.12.3.11	Section 11.12.3.11 requires information on subsurface conditions that appear to be similar to information required under Section 11.12.3.8.ii (page 151, lines 33-37).	Page 152, Lines 20-27: Suggest deleting Section 11.12.3.11 and adding additional requirements to Section 11.12.3.8.ii.
234	Part 12, Section 12.1	The proposed requirement to annually inspect and maintain the surface water run-on/runoff control features associated with TA-16-388 and -399 is not found in NMED or EPA rules, is not supported in the administrative record, and is not protective of human health and the environment. LANL's permit application did not suggest this permit condition. Run-on and runoff control features associated with storm water runoff from the unit are inspected in accordance with the Environmental Protection Agency's Multi-Sector General Permit for Storm Water. Run-on to the units is prevented via the unit covers that are inspected weekly using the procedure identified in the Inspection Plan (Attachment E) of this Permit. This change does not make the condition less stringent but reflects the procedure more accurately.	Page 177, Lines 12-15: Please change the text to read: "The Permittees shall ~~inspect and~~ maintain as necessary the surface water run-on/run-off control features associated with TA-16-388 and TA-16-399, including all associated rock retention structures and the retaining wall (40 CFR §§ 264.601(b) and 270.32(b)(2)). The Permittees shall document ~~these inspections~~any maintenance or repair of these controls in the Facility Operating Record."

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235	Part 12, Section 12.1	The proposed requirement to sample soils around the TA-16 burn units annually is not found in NMED or EPA rules, is not supported in the administrative record, and is not protective of human health and the environment. LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record. The thermal treatment units located at TA-16 are not land treatment units and should not be subject to Subpart M Unsaturated Zone Monitoring (40 CFR §264.278) requirements. However, the suggested changes made to the text provide the information necessary to satisfy the requirements of 40 CFR §264.601(b) establishing background soil concentrations for the immediate area and indicate the impact that open burning treatment operations have at the site through the comparison of the two analyses.	Page 177, Lines 16-31: Please delete the requirement for soil sampling (lines 16-31) to be conducted at the TA-16 Burn Ground or revise this text as follows: "<u>The Permittees shall conduct soil sampling and analysis at the TA-16-399 Burn Tray and TA-16-388 Flash Pad (40 CFR 264.601(b) and 264.602). Soil samples shall be collected within 180 days from the issuance of this Permit and the sampling and analysis report must be submitted within 60 days from that date in accordance with the date specified in Attachment N (Compliance Schedule). Soil sampling and analysis shall again be conducted 5 years after the issuance of this Permit in the same month initial sampling was conducted. The sampling and analysis report for this activity must be submitted within 90 days from the date of collection and compare results to the previous analysis in accordance with the date specified in Attachment N (Compliance Schedule).</u> <u>Four soil samples shall be collected from the zero to six inch depth and analyzed for total metals, explosives, and semi-volatile organic compounds. Sample locations shall be within 25 feet of the OB unit's concrete pad, along its north, south, east, and west sides</u>." The text currently reads: "The Permittees shall conduct an annual soil sampling and analysis program in accordance with 40 CFR § 264.278 and § 264.602. Soil samples shall be collected annually at the open burn unit each July; the sampling and analysis report must be submitted in accordance with the date specified in Attachment N (*Compliance Schedule*). Sampling shall occur within 24 hours following the last treatment event for June of each year at the unit. If no treatment has been conducted since June of the preceding year, annual sampling may not be conducted for that annual period. The Department shall be notified, in writing, no later than July 1 of each year after the effective date of this Permit of the anticipated annual soil sampling date. If treatment has not been conducted since the previous June, the Permittees shall certify, in writing, that treatment was not conducted at the unit during the preceding year no later than July 1 of each year after the effective date of this Permit. Four soil samples shall be collected from the zero to six inch depth and analyzed for total metals, explosives, and semi-volatile organic

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			compounds. Sample locations shall be within 25 feet of the OB unit's concrete pad, along its north, south, east, and west sides. If sampling analysis results indicate hazardous constituents above residential risk soil screening levels, the Permittees shall follow the sampling and remediation requirements in Permit Sections 9.2.4.7 and 9.2.4.8."
236	Part 12, Section 12.1	The proposed condition appears to require that the units undergo clean closure, or at least cleanup, if sampling identifies hazardous constituents present at levels that exceed residential soil screening levels. Existing soil analyses conducted nearby indicate the presence of some constituents above residential levels. It is not practicable or necessary to clean this area if hazardous constituents are present above residential levels while the units are still in operation. The area where the open burning units are located is surrounded by SWMUs and it is likely that contamination found at the site would be attributed to RCRA historical operations rather than open burning operations. Clean up for SWMUs is scheduled to be conducted through the 2005 NMED Order on Consent. Air dispersion and deposition models submitted to the Department as part of the permit application for these units demonstrate that their continued operation does not present a threat to human health or the environment. RCRA requires the immediate clean up of spills but does not require annual cleanup of hazardous waste management units that operate in compliance with the regulations. There is no basis in the rules or the administrative record for this condition. Further, LANL's permit application did not suggest this permit condition.	Page 177, Lines 29-31: Please remove the text: "If sampling analysis results indicate hazardous constituents above residential risk soil screening levels, the Permittees shall follow the sampling and remediation requirements in Permit Sections 9.2.4.7 and 9.2.4.8."
237	Part 12, Section 12.2	The proposed requirement is not found in NMED or EPA rules, and is not protective of human health and the environment. The condition placing a minimum quantity burn restriction for the TA-16 Burn Ground will impact waste management practices because smaller burns relieve the need for 90 day storage extensions and address issues with accumulation of	Page 178, Lines 2-9: Please change the text to read: "<u>The Permittees may treat dry or wet bulk high explosives (HE) and HE-contaminated waste on the TA-16-388 Flash Pad.</u> <u>The Permittees shall not treat more than 250 lbs of combustible material per event at the Flash Pad or a total maximum annual quantity</u>

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		waste at smaller generator sites to meet the threshold quantity. At the sites where most HE contaminated waste is generated, laboratories have quantity limitations for the amount of HE that can be accumulated within the area. These quantity limits are within the gram range for most laboratories and at the time that the HE quantity limit for the individual laboratory is reached, waste must be moved from the satellite accumulation area within the laboratory to a 90 day storage accumulation area. The waste must then be transported and treated at the TA-16-388 Flash Pad within the regulatory required time frame. Suggested changes to these paragraphs remove the minimum quantity limitation, correct the maximum quantity per burn at TA-16-388, and clarify that the maximum annual quantity applies to both units at the TA-16 Burn Ground. This decreases the amount of waste that may be open burned throughout a year and is consistent with the maximum quantity used for air quality modeling conducted for the open burning units. LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record.	for both open burning units at the TA-16 Burn Ground of 20,000 lbs (40 CFR 270.32(b)(2)). Combustible material shall not include the weight of non-burnable material such as equipment, soil, or piping." Text currently reads: "The Permittees may treat dry or wet bulk high explosives (HE) on the TA-16-388 Flash Pad. The Permittees shall not treat more than 250 lbs bulk HE per event (with a maximum annual amount of 20,000 lbs) and no less than 100 lbs per event (with a maximum annual amount of 800 lbs) at the Flash Pad (40 CFR § 270.32(b)). The Permittees may treat HE-contaminated waste on the TA-16-388 Flash Pad. The Permittees shall not treat more than 1,000 lbs per event (with a maximum annual amount of 20,000 lbs) and no less than 50 lbs per event (with a maximum annual amount of 600 lbs) of HE-contaminated waste at the Flash Pad (40 CFR § 270.32(b))."
238	Part 12, Section 12.2	The proposed requirement is not found in NMED or EPA rules, and is not protective of human health and the environment. The environmental air modeling conducted for the TA-16 Burn Ground included an analysis of the estimated air dispersion and deposition impacts for constituents in surrogate waste streams as similar as possible to those treated at the open burning units. The modeling analysis used a conservative approach that assumed wastes with the highest emissions factors were burned frequently. Even with these conservative estimations, the air dispersion and deposition impacts analysis did not support a prohibition for the treatment of any of the constituents that were modeled. The LANL TA-16 Burn Ground Air	Page 178, Lines 10-22: Please delete lines 10-22.

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		Pathway Assessment Report, Revision 0 was submitted to the Department on September 5, 2007 (LA-UR-07-5711). Additionally, LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record.	
239	Part 12, Section 12.2	The proposed requirement to ensure treated soils have a minimum level of HE is not found in NMED or EPA rules, is not supported in the administrative record, and is not protective of human health and the environment. Setting a minimum level of HE within soils may restrict the treatment of soil that is contaminated with less than 10% HE but contains large pieces of HE that pose a detonation danger and should not be shipped off-site for treatment. In contrast, large pieces of HE as a contaminant within solvents can be filtered out of the solvent prior to shipment off-site. LANL's permit application did not suggest this permit condition.	Page 178, Lines 24-25: Please change text to read: "The Permittees shall ensure solvents ~~or soils~~ treated at the Flash Pad have a minimum of 10% HE (40 CFR 270.32(b)(2))."
240	Part 12, Section 12.3	The proposed limit on the minimum amounts of HE treated at the TA-16 burn units is not found in NMED or EPA rules, is not supported in the administrative record, and is not protective of human health and the environment. A minimum quantity burn restriction will impact waste management practices because smaller burns are necessary to comply with the 90 day storage limit and accumulation of waste at smaller generator sites to meet the threshold quantity. In addition, some of the bulk HE that is stored in magazines must be placed into a 90 day accumulation area as they are removed from storage in the stockpile and the waste determination is made. Air modeling conducted for the TA-16 Burn Ground assumed at maximum quantity for waste treatment at the entire Burn Ground to be 20,000 lbs, rather than 20,000 lbs for each unit. Revised text reflects this quantity restriction and is consistent with LANL's permit application. LANL's permit application did not	Page 178, Lines 29-33: Please change the text on lines 29-33 to read: "<u>The Permittees shall ensure that the TA-16-399 Burn Tray is used to treat only pure dry HE (40 CFR § 270.32(b)(2)).</u> <u>The Permittees shall not treat more than 1,000 lbs bulk HE per event at the Burn Tray with a maximum annual quantity for both open burning units at the TA-16 Burn Ground of 20,000 lbs (40 CFR 270.32(b)(2))</u>." The text currently reads: "The Permittees shall ensure that the TA-16-399 Burn Tray is used to treat only pure dry HE (40 CFR § 270.32(b)). The Permittees shall not treat more than 1,000 lbs bulk HE per event (with a maximum annual amount of 20,000 lbs) and no less than 100 lbs per event (with a maximum annual amount of 800 lbs) at the Burn Tray (40 CFR § 270.32(b))."

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		suggest this permit condition.	
241	Part 13, Section 13.1	Since the drafting of the 2002 TA-50 revised application, operational needs have changed and TA-50-69 is currently permitted as a facility where items that are prohibited from disposition at the Waste Isolation Pilot Plant (WIPP) are remediated pursuant to the "Proposed Hazardous Waste Facility Permit Modification Technical Area 50 Building 1; Rooms 35, 36, and 38/38A Container Storage Areas Building 69; Indoor and Outdoor Container Storage Areas; Technical Area 54 West Building 38; High Bay, Low Bay, Loading Dock, and Outdoor Container Storage Areas," approved by the Department on February 28, 1997. These prohibited items include free liquids within containers and it is necessary to maintain the ability to store liquids at TA-50-69. All containers storing free liquids are managed on secondary containment that meets the requirements of 40 CFR §264.175. Additionally, waste management procedures at TA-50-69 encompass the controls necessary for the storage of containers with free liquids because the current LANL Hazardous Waste Facility Permit allows for the storage of liquids in containers at the facility.	Page 181, Lines 16-17: Please delete the sentence: "The Permittees are prohibited from storing hazardous or mixed waste containing free liquids at TA-50 CSUs."
242	Part 14, Section 14.1	Suggested change clarifies that this Permit includes only one CSU at TA-54 Area L and is an update from the information submitted with LANL's permit application.	Page 183, Line 7: Change the sentence to read: "The Permittees shall ensure that long-term storage of hazardous waste in containers at TA-54 occurs only in the ~~two~~ CSU~~s~~ at Area L, the nine CSUs at Area G, the two CSUs at TA-54 West, and as identified in Attachment O (Hazardous Waste Management Units)."
243	Part 14, Section 14.2	The proposed requirement to plug and abandon the specified fire protection drain line system at Area G is not found in NMED or EPA rules, is not supported in the administrative record, and is not protective of human health and the environment. The drain line	Page 183, Lines 13-14: Please delete sentence: "The Permittees shall plug and abandon the fire protection drain line system between Area G, Pad 9, Domes 229, 231, and 232 (40 CFR § 270.32(b))."

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		system is part of the secondary containment for the fire suppression system at the location and supports the storage of mixed waste at that site under DOE requirements. LANL's permit application did not suggest this permit condition (see also NMSA 1978, 74-4-4D).	
244	Part 14, Section 14.3	The proposed requirement to remove liquids from the holding tank in Area L immediately is not found in NMED or EPA rules and is not protective of human health and the environment. The tank collects water from the fire suppression system only and is not subject to tank storage requirements. The tank is not part of the secondary containment system for wastes stored in the dome; all liquid wastes stored within the dome are stored on secondary containment pallets. Further, LANL's permit application did not suggest this permit condition, and support could not be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	Pages 183-184, Lines 30-33 and Lines 1-2: Please delete paragraph.
245	Part 14, Section 14.4	The suggested change corrects a typographical error.	Page 182, Line 12: Remove the second "wastes" from the sentence. .
246	Part 14, Figure 14-1	Figure 14-1 needs to be updated.	Page 185: Updated figure has been included with this document as Appendix E.
247	Part 15, Section 15.1	Suggested change corrects description of the outdoor container storage pad location.	Page 187, Line 8: Please change "northwest" to "<u>west southwest</u>".
248	Part 15, Section 15.2	The proposed limit on the number of drums that can be stored on a containment pallet is not found in NMED or EPA rules, is not supported in the administrative record, and is not protective of human health and the environment. The permit condition within lines 29-30 of Page 187 ensures that all containers that potentially contain free liquids are stored on secondary	Page 188, Lines 1-2: Suggest removing the following text "The Permittees shall ensure that no more than two-55 gallon drums are stored on self-containment pallets at TA-55." Or replace the language with the following: "<u>Permittees shall ensure that the number of 55-gallon drums stored on self-containment pallets</u>

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		containment. Containment pallets may be designed to hold four 55-gallon drums, and limiting the number of drums to less than the pallet design capacity wastes storage space and requires more drum handling than necessary to manage containers safely. Further, LANL's permit application did not suggest this permit condition (see also NMSA 1978, 74-4-4D).	does not exceed the design capacity of the pallets."
249	Part 16, Throughout	The suggested change clarifies that container storage within the three rooms at TA-3, Building 29 (CMR Building) is considered one container storage unit. These rooms are included as one unit within LANL's Part A Permit Application.	Page 191: Please change the text to reflect that all three rooms make up one CSU.
250	Part 16, Section 16.1	The suggested change corrects a typographical error.	Page 191, Lines 3-5: Change text to read "The Permittees shall maintain and operate the CSU at TA-3~~55~~ in accordance with Permit Part 3 (Storage in Containers), in accordance with Attachment G (Container Management), TA-3 Section, and in accordance with this Permit Part".
251	Part 16, Section 16.2	Add building designation 29 to TA-3 to properly identify location of waste storage units.	Page 191, Line 7: Change should read "TA-3-29" to correctly specify the location of the building where the CSU is located.
252	Part 16, Section 16.2	The proposed limit on the number of drums that can be stored on a containment pallet is not found in NMED or EPA rules, is not supported in the administrative record, and is not protective of human health and the environment. The permit condition within lines 11-12 of Page 191 ensures that all containers that potentially contain free liquids are stored on secondary containment. Containment pallets may be designed to hold four 55-gallon drums, and limiting the number of drums to less than the pallet design capacity wastes storage space and requires more drum handling than necessary to manage containers safely. Further, LANL's permit application did not suggest this permit condition (see also NMSA 1978, 74-4-4D).	Page 191, Lines 16 and 17: Suggest removing the following text: "The Permittees shall ensure that no more than two-55 gallon drums are stored on self-containment pallets at TA-3"; Or replace the language with the following: "Permittees shall ensure that the number of 55-gallon drums stored on self-containment pallets does not exceed the design capacity of the pallets."

Comment Number	Section of Permit	Comment	Suggested Text Change
253	Throughout all Attachments to the Permit	This permit should include only one container storage unit at TA-54 Area L. The storage shaft unit that was included in the 2003 TA-54 Part B Permit Application has since undergone closure activities and will not be permitted.	Recommend changing all references to two storage units at Area L to refer to only one storage unit and the removal of all language associated with storage shafts 36 and 37 at TA-54 Area L from the Attachments to the Permit. Demonstrations of this change have been provided within the attachments to this document. Specific instances of this issue have also been included within this list of comments to the draft Permit.
254	Attachment A, Throughout all Attachment Sections	NMED cites "Appendix A of the LANL General Part B" and other parts of the permit application in different sections of the Permit Attachments. Citations to the permit application, however, are confusing because the application itself is not part of the Permit and most parts of the application have been incorporated directly into the Permit as a "Permit Attachment" and are enforceable. For example, on page 40 of Permit Attachment A, NMED states that "[g]eneral traffic patterns . . . are provided in Appendix A from the LANL General Part B (LANL, 1998a). Permit Attachment A goes on to describe traffic patterns under different sections (i.e., A.2.1 et. seq.) The only set of traffic patterns that apply under the Permit, are those in the Permit Attachment A – not LANL's General Part B. To avoid confusion and the potential for conflicting requirements, these references should be either deleted or included parenthetically.	Recommend replacing references to "Appendix A of the LANL General Part B" with the Permit Attachment sections. If reference to the permit attachment is necessary, than LANL would recommend making the reference parenthetically. See below for example of Permit Attachment changes: A.2. Traffic Patterns General traffic pattern information, traffic volumes, and traffic control signals for the LANL-wide facility <u>are provided in</u> "<u>the general section of this Permit Attachment</u>". Demonstrations of this change have been provided with this document within appendix f. Specific instances of this issue have also been included within these comments to the draft permit.
255	Attachment A, Section A.1	The second paragraph of the section refers to the "University of California" and needs to be updated.	Page 4, Second paragraph of the section: Please change "the University of California" in the third sentence of the paragraph to "<u>Los Alamos National Security, LLC (LANS)</u>". A demonstration of this change has been provided with this document within Appendix F.
256	Attachment A, Section A.1	It appears that the first sentence of the third paragraph of the section and the second sentence of the fourth paragraph were inadvertently combined. Text needs to be changed back to the language in LANL's permit	Page 4, Third and fourth paragraphs of the section: Please change the first sentence of the third paragraph to read: "<u>LANL is an existing treatment and storage facility</u>." Change the second and third sentences of the fourth paragraph to read:

Comment Number	Section of Permit	Comment	Suggested Text Change
		application.	"Mixed low-level waste is generated mainly from R&D activities, processing and recovery operations, general facility operations, D&D projects, and ER activities. Mixed transuranic waste is generated primarily from R&D activities, processing and recovery operations, and D&D projects." A demonstration of this change has been provided with this document within Appendix F.
257	Attachment A, Section A.4	The locations of maps as listed in this section are not accurate. Text needs to be updated to clarify where maps and figures are located.	Page 8: Please change third bullet to read: "Surrounding land uses are shown in Permit Part 1, Figure 1-1." A demonstration of this change has been provided with this document within Appendix F.
258	Attachment A, Section A.4	The locations of maps as listed in this section are not accurate. Text needs to be updated to clarify where maps and figures are located.	Page 8: Please change fourth bullet to read: "Fire stations serving LANL and the County of Los Alamos are shown on Figure E-2 of Appendix E of the LANL General Part B Application (LANL, 2003a)." A demonstration of this change has been provided with this document within Appendix F.
259	Attachment A, Section A.4	The locations of maps as listed in this section are not accurate. Text needs to be updated to clarify where maps and figures are located.	Page 8: Please change fifth bullet to read: "Wind roses for LANL are shown on Figures A-3 and A-4 of the LANL General Part B Application (LANL, 2003a)." A demonstration of this change has been provided with this document within Appendix F.
260	Attachment A, Section A.4	The locations of maps as listed in this section are not accurate. Text needs to be updated to clarify where maps and figures are located.	Page 8: Please change sixth bullet to read: "Access control features (e.g., fences, gates) are shown on the figures in Permit Part 2." A demonstration of this change has been provided with this document within Appendix F.
261	Attachment A, Section A.4	The locations of maps as listed in this section are not accurate. Text needs to be updated to clarify where maps and figures are located.	Page 8: Please change seventh bullet to read: "Buildings and structures are

Comment Number	Section of Permit	Comment	Suggested Text Change
			shown on the figures in Permit Part 2." A demonstration of this change has been provided with this document within Appendix F.
262	Attachment A, Section A.4	The locations of maps as listed in this section are not accurate. Text needs to be updated to clarify where maps and figures are located.	Page 8: Please change eighth bullet to read: "The locations of the hazardous and/or mixed waste management units at LANL are shown on maps in the LANL General Part A and on Figure 2-8 of this Permit." A demonstration of this change has been provided with this document within Appendix F.
263	Attachment A, Section A.4	The locations of maps as listed in this section are not accurate. Text needs to be updated to clarify where maps and figures are located.	Page 8: Please change tenth bullet to read: "Storm, sanitary, and process sewer systems at LANL are shown on Map A-1 of the LANL General Part B (LANL, 2003a)." A demonstration of this change has been provided with this document within Appendix F.
264	Attachment A, Section A.4	The locations of maps as listed in this section are not accurate. Text needs to be updated to clarify where maps and figures are located.	Page 8: Please change eleventh bullet to read: "A map showing the boundaries of LANL is Figure 2-8 of this Permit." A demonstration of this change has been provided with this document within Appendix F.
265	Attachment A, Section A.4	The locations of maps as listed in this section are not accurate. Text needs to be updated to clarify where maps and figures are located.	Page 8: Please change twelfth bullet to read: "Drainage control features (e.g., run-on/runoff) are shown on a figure(s) in TA-specific permit applications, permit modification requests, or permit renewal applications." A demonstration of this change has been provided with this document within Appendix F.
266	Attachment A, Sections A.5.2, A.5.3, and A.5.4	Section A.5 of the draft Permit contains a description of groundwater conditions at LANL and also describes investigations being conducted to characterize groundwater. Some of the information presented in this section is outdated. Specifically, Sections A.5.2 (page 12, paragraph 3 and page 13, paragraph 1), A.5.3 (page	Section A.5 should be revised so that the description of groundwater investigations is up to date. Updated information on groundwater characterization was provided in Section 12.1 of the Closure/Post-Closure Plan for Technical Area-54 Area G Landfill submitted to the Department in March 2007 (LA-UR-07-1984).

Comment Number	Section of Permit	Comment	Suggested Text Change
		20, paragraph 1), and A.5.4 (page 20, paragraph 3) refer to investigations being conducted under the Hydrogeologic Workplan. Section IV.A.1 of the Consent Order states, "The requirements of this Consent Order replace the requirements of the Hydrogeologic Workplan." Therefore, investigations being conducted under the Hydrogeologic Workplan have been replaced by investigations being conducted under the Consent Order and all recent and ongoing groundwater characterization activities at LANL have been and are being conducted pursuant to the Consent Order. Numerous groundwater characterization requirements have been established by work plans approved by the Department subsequent to the effective date of the Consent Order (March 1, 2005).	
267	Attachment A, Section A.5.1	There is a typographical error within the last sentence of the second paragraph within the section.	Page 9: Please change the word "uncomfortably" to "unconformably".
268	Attachment A, Section A.5.1	There is a typographical error within the last sentence of the third paragraph of the section.	Page 9: Suggest correct spacing of the final period "." at the end of the paragraph.
269	Attachment A, Section A.5.3.2	The description of the regulatory status of perchlorate in drinking water within this section was provided for informational purposes only. The perchlorate regulatory history has changed since the drafting of the information within the LANL permit application and was provided for informational purposes only.	There are no specific text changes associated with this comment.
270	Attachment A, Section A.7	There is at typographical error within the second to the last reference on the page.	Page 27: Please correct "R-9i" to be "R-9".
271	Attachment A, Section A.7	There is at typographical error within the sixth reference on the page.	Page 29: Please correct the spacing between "Longmire," and "P".
272	Attachment A, TA-3, Section A.1	Final sentence of section should reference the Attachment to the Permit where the container storage unit at TA-3 is described.	Page 39: Please change the last sentence of the section to read: "Descriptions of these storage locations are provided in the TA-3 section of Attachment G of this Permit."

Comment Number	Section of Permit	Comment	Suggested Text Change
			A demonstration of this change has been provided with this document within Appendix F.
273	Attachment A, TA-3, Section A.2,	The sentence needs to be edited to reference the correct section of the Permit.	Page 41: Please change the first sentence of the section to read: "General traffic pattern information, traffic volumes, and traffic control signals for the LANL-wide facility are provided in the general Section A.2 of this Permit Attachment." A demonstration of this change has been provided with this document within Appendix F.
274	Attachment A, TA-3, Section A.4	The first sentence of the section needs clarification for consistency with the bullets that follow it.	Page 41: Please change the first sentence of the section to read: "Topographic maps and figures are located in the following referenced documents to meet the requirements of 40 CFR, Subpart IX, 270.14(b)(19)."
275	Attachment A, TA-3, Section A.4	The location of the surrounding land use figure as listed in this section is not accurate. Text needs to be updated to clarify where figure is located and for consistency within the Permit.	Page 42: Please change the third bullet to read: "Surrounding land uses are shown on Figure 1-1 of this Permit." A demonstration of this change has been provided with this document within Appendix F.
276	Attachment A, TA-3, Section A.4	The location for the LANL legal boundaries as listed in this section is not accurate. Text needs to be updated to clarify where figure is located and for consistency within the Permit.	Page 42: Please change the fifth bullet to read: "A map showing the legal boundaries of LANL (including TA-3) is provided as Figure 2-8 of this Permit." A demonstration of this change has been provided with this document within Appendix F.
277	Attachment A, TA-16, Section A.1	Final sentence of section should reference the Attachment to the Permit where the open burning units are described.	Page 47: Please change the last sentence of the section to read: "Descriptions of these two units are provided in Attachment I of this Permit." A demonstration of this change has been provided with this document within Appendix F.
278	Attachment A, TA-16, Section A.2,	The sentence needs to be edited to reference the correct section of the Permit.	Page 48: Please change the first sentence of the section to read: "General traffic pattern information, traffic volumes, and traffic control signals for the LANL-wide facility are provided in the general Section A.2 of this

Comment Number	Section of Permit	Comment	Suggested Text Change
			Permit Attachment." A demonstration of this change has been provided with this document within Appendix F.
279	Attachment A, TA-16, Section A.4	The location of the surrounding land use figure as listed in this section is not accurate. Text needs to be updated to clarify where figure is located and for consistency within the Permit.	Page 49: Please change the third bullet to read: "Surrounding land uses are shown on Figure 1-1 of this Permit." A demonstration of this change has been provided with this document within Appendix F.
280	Attachment A, TA-16, Section A.4	LANL boundaries are included as Figure 2-8 of the Permit. Text should be revised to be consistent with this inclusion.	Page 49: Please change the fifth bullet to read: "A map showing the legal boundaries of LANL (including TA-16) is provided as Figure 2-8 of this Permit." A demonstration of this change has been provided with this document within Appendix F.
281	Attachment A, TA-16, Section A.4	Access control features are included as Figure 2-2 of the Permit. Text should be revised to be consistent with this inclusion.	Page 49: Please change the sixth bullet to read: "Access control features for TA-16 (e.g. fences, gates) are shown on Figure 2-2 of this Permit." A demonstration of this change has been provided with this document within Appendix F.
282	Attachment A, TA-50, Section A.1	Figure 2-3 of the Permit depicts the container storage units at TA-50. Text should be revised to be consistent with this inclusion.	Page 57: Please change the fourth sentence of the section to read: "Figure 2-3 of this Permit depicts facilities, structures, and hazardous and mixed waste units within the TA-50 boundary." A demonstration of this change has been provided with this document within Appendix F.
283	Attachment A, TA-50, Section A.1.3	LANL boundaries are included as Figure 2-8 of the Permit. Text should be revised to be consistent with this inclusion.	Page 58: Please change the first sentence of the second paragraph to read: "As depicted on Figure 2-8 of this Permit, the TAs that border TA-50 include: TA-35, TA-40, TA-55, TA-63, and TA-66. TA-35, located northeast of TA-50, includes facilities that conduct nuclear safeguards research and development."

Comment Number	Section of Permit	Comment	Suggested Text Change
			A demonstration of this change has been provided with this document within Appendix F.
284	Attachment A, TA-50, Section A.2	The sentence needs to be edited to reference the correct section of the Permit.	Page 59: Please change the first sentence of the section to read: "General traffic pattern information, traffic volumes, and traffic control signals for the LANL-wide facility are provided in the general Section A.2 of this Permit Attachment." A demonstration of this change has been provided with this document within Appendix F.
285	Attachment A, TA-54, Section A.1	LANL boundaries are included as Figure 2-8 of the Permit. Text should be revised to be consistent with this inclusion.	Page 68: Please change the first sentence of the section to read: "TA-54 is located in the east-central portion of LANL (Figure 2-8 of this Permit) on Mesita del Buey, an east-west-trending finger mesa bounded by Cañada del Buey to the north and by Pajarito Canyon to the south." A demonstration of this change has been provided with this document within Appendix F.
286	Attachment A, TA-54, Section A.2	The sentence needs to be edited to reference the correct section of the Permit.	Page 69: Please change the first sentence of the section to read: "General traffic pattern information, traffic volumes, and traffic control signals for the LANL-wide facility are provided in the general Section A.2 of this Permit Attachment." A demonstration of this change has been provided with this document within Appendix F.
287	Attachment A, TA-54, Section A.4	The location of the surrounding land use figure as listed in this section is not accurate. Text needs to be updated to clarify where figure is located and for consistency within the Permit.	Page 71: Please change the third bullet to read: "Surrounding land uses are shown on Figure 1-1 of this Permit." A demonstration of this change has been provided with this document within Appendix F.
288	Attachment A, TA-54, Section A.4	LANL boundaries are included as Figure 2-8 of the Permit. Text should be revised to be consistent with this inclusion.	Page 71: Please change the fifth bullet to read: "A map showing the legal boundaries of LANL (including TA-54) is provided as Figure 2-8 of this Permit."

Comment Number	Section of Permit	Comment	Suggested Text Change
			A demonstration of this change has been provided with this document within Appendix F.
289	Attachment A, TA-54, Section A.4	Access control features are included as Figures 2-4, 2-5, and 2-6 of the Permit. Text should be revised to be consistent with this inclusion.	Page 71: Please change the sixth bullet to read: "Access control features at TA-54 (e.g. fences, gates) are shown on Figures 2-4, 2-5, and 2-6 of this Permit." A demonstration of this change has been provided with this document within Appendix F.
290	Attachment A, TA-54, Section A.7	There is a typographical error within the third reference on the page.	Page 73: The reference to the TA-54 Part B Permit Renewal Application needs a period at the end.
291	Attachment A, TA-55, Section A.1	Figure 2-7 of the Permit depicts the container storage units at TA-55. Text should be revised to be consistent with this inclusion.	Page 77: Please change the last sentence of the first paragraph to read: "The locations of the waste management units at TA-55 are shown on Figure 2-7 of this Permit." A demonstration of this change has been provided with this document within Appendix F.
292	Attachment A, TA-55, Section A.1	Final sentence of section should reference the Attachment to the Permit where the TA-55 container storage units, the storage tank system, and the cementation unit are described.	Page 77: Please change the last sentence of the section to read: "Detailed descriptions of the waste management units at TA-55 are provided in Attachments G, H and J of this Permit, respectively." A demonstration of this change has been provided with this document within Appendix F.
293	Attachment A, TA-55, Section A.2	The sentence needs to be edited to reference the correct section of the Permit.	Page 78: Please change the first sentence of the section to read: "General traffic pattern information, traffic volumes, and traffic control signals for the LANL-wide facility are provided in the general Section A.2 of this Permit Attachment." A demonstration of this change has been provided with this document within Appendix F.
294	Attachment A, TA-55, Section A.2.2	The traffic volumes references within this section are derived from a Pajarito Road study conducted by Johnson Control World Service, Inc. in 1999. Since that	Page 78: Please add the following to the end of the paragraph: "Since the time

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		time, Pajarito Road has been closed to non-LANL badge holders. An update needs to be made to the text to reflect this change.	of this study, Pajarito Road has been closed to non-LANL badge holders, reducing the average daily traffic volume." A demonstration of this change has been provided with this document within Appendix F.
295	Attachment A, TA-55, Section A.4	The location of the surrounding land use figure as listed in this section is not accurate. Text needs to be updated to clarify where figure is located and for consistency within the Permit.	Page 79: Please change the third bullet to read: "Surrounding land uses are shown on Figure 1-1 of this Permit." A demonstration of this change has been provided with this document within Appendix F.
296	Attachment A, TA-55, Section A.4	LANL boundaries are included as Figure 2-8 of the Permit. Text should be revised to be consistent with this inclusion.	Page 79: Please change the fifth bullet to read: "A map showing the boundaries of LANL (including TA-55) is provided as Figure 2-8 of this Permit." A demonstration of this change has been provided with this document within Appendix F.
297	Attachment A, TA-55, Section A.4	There is at typographical error within the last line on the page.	Page 73: Reference should have a period at the end.
298	Attachment A, TA-55, Section A.4	There is at typographical error within the last line on the page.	Page 79: Please change "here in after" to be "hereinafter".
299	Attachment A, TA-55, Second Section A.2.1	The reference to a specific organization within this section needs to be updated. A functional designation is recommended and is consistent with comments made within the Contingency Plan (Attachment D) of this Permit.	Page 88: Please change the references in paragraphs 8 and 11 of this section from "the Hazardous Materials Response Group (S-10)" and "S-10" to "Emergency Management and Response personnel". A demonstration of this change has been provided with this document within Appendix F.
300	Attachment A, TA-55, Second Section A.2.3	The reference to a specific organization within this section should be updated. A functional designation is recommended and is consistent with comments made within the Contingency Plan (Attachment D) of this Permit.	Page 88: Please change the reference in this section from "S-10" to "Emergency Management and Response personnel". A demonstration of this change has been provided with this document within Appendix F.
301	Attachment A, TA-55,	In the second reference in the section, there is a typographical error.	Page 93: Need a period "." after "New Mexico".

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	Second Section A.5		
302	Attachment B	Part XIV gives information for the EPA Hazardous Waste Numbers that can be stored at each of the individual Technical Areas addressed by the Permit. The portions of this Attachment (aside from Part XIV) give information that is subject to change and in some cases is not consistent with the text of this Permit. In addition, periodic revisions have been used to ensure that changes within the rest of this form are communicated (e.g. the name of the facility contact, listing of other permits). The form also contains information about interim status units (i.e. TA-14, TA-36, and TA-39) that are not included within this permit as well as units that have been certified as closed (e.g. TA-54 Area L Tanks) or are undergoing closure (e.g. disposal units at TA-54 and storage shafts at TA-54). Information associated with these units should not be included within the permit and if it is, should be included for informational purposes only. Changing of such information should not constitute a permit modification.	Recommend only including pages 20-23, 25-26 30-57, 59-71, 73-85, and 87-90 of Part XIV (Description of Hazardous Wastes) of the form as Attachment B of this Permit.
303	Attachment C, Throughout	The reference to a specific organization within this section should be updated. A functional designation is recommended and is consistent with comments made to other Attachments of this Permit.	Please change references to "environmental restoration" and "ER" to "corrective action" and remove "ER" from the abbreviations and acronyms list.
304	Attachment C, Throughout	The reference to a specific organization within this section should be updated. A functional designation is recommended and is consistent with comments made to other Attachments of this Permit.	Please change references within this attachment from "Facilities and Waste Operations-Solid Waste Operations" and "FWO-SWO" to "waste management personnel," as appropriate and remove "FWO-SWO" from the acronyms list.
305	Attachment C, Table C-1	The regulatory crosswalk was provided for the purpose of walking reviewers through the LANL permit application document. Once the Permit is final, the table could be confusing if additional, non-referenced conditions have been added. Additionally, inclusion of information represents an administrative burden if	Page 3: Please delete Table C-1 or include reference "Informational Only" and sections referenced within the table as "B" should be revised to state "C".

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		future modifications are necessary. If included, Table C-1 should be clearly labeled as "Informational Only".	
306	Attachment C, Section C.1.3.2	Although the open burning unit at TA-16-388 has the ability to treat soils, the full description was not included and an update of the LANL permit application is necessary for the description of wastes treated within this Permit Attachment. The suggested language change corrects this oversight in the application.	Page 21: Recommend changing "HE-Contaminated Equipment" to: "HE-Contaminated Noncombustible Material" "This waste stream consists of HE-contaminated soils and equipment, which includes discarded, noncombustible equipment and material from HE-processing areas; D&D, R&D, and ER activities; and laboratory use. This waste stream is typically recycled or disposed of as New Mexico Special Waste after treatment."
307	Attachment C, Section C.2.2	This permit condition requires analytical reporting in excess of that required by regulation. The requirements for waste analysis at 40 CFR § 264.13(a)(1) are limited to those necessary to manage the waste. This condition will involve additional expense in that analytical laboratories would require extra reporting and quality assurance efforts. Further, LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	Page 24: Please delete the words "and all constituents the laboratory analytical method is capable of measuring".
308	Attachment C, Section C.3	Requirement that generator information accompany waste transport as written broadens the notification requirements in 40 CFR Part 268. Generators are only required to provide one-time notifications to off-site TSDFs until such time as the waste changes (40 CFR § 268.7, particularly (a)(3) and (a)(9)). The next paragraph also includes provisions for when the certification kept with the waste characterization information needs to be changed. Further, LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	Page 26: Please delete "Subsequent transport of waste streams whose waste characterization has been previously approved by FWO-SWO personnel shall be accompanied by a certification statement from the waste generator that the waste has not changed significantly so as not to be accurately represented by the previously approved waste characterization information."
309	Attachment C, Section C.3.1.1.	The final paragraph of the section designates the format of waste characterization records that must be kept. Although TSDFs may use the information generated by	Page 30: Please delete the words, ""in paper form" and "in an electronic form" from the final paragraph of Section C.3.1.1.

Comment Number	Section of Permit	Comment	Suggested Text Change
		the generators, there are no regulatory specifications for how the information must be stored (40 CFR § 262.11, 262.40(c), and 40 CFR § 264.13). Waste characterization information will be available at LANL in either printed or electronic format.	
310	Attachment C, Section C.3.1.2.1	Analysis for total concentration of toxicity characteristic contaminants is not applicable to all samples, and as written this sentence may be misread. The recommended change clarifies this and is consistent with LANL's permit application.	Page 34: In the second sentence of the second paragraph, please change "will" to "may".
311	Attachment C, Section C.3.1.3.	Addition of text from Section 2.4.7 of this Permit will help to ensure consistency between the sections.	Page 38: Please add the following sentence to the end of this section, "Wastes listed at 40 CFR § 261.33 (i.e., discarded commercial chemical products, off-specification species, container residues, and spill residues thereof) and for which the Permittees possess a Material Safety Data Sheet (MSDS), or equivalent information from the manufacturer identifying chemical content, are exempt from the re-evaluation requirements of this permit condition."
312	Attachment C, Section C.3.2	Text within this section should be updated using the most recent information as submitted to the NMED with the permit modification request for the Transuranic Waste Facility, August 2007 and reviewed through the associated public comment period. Changes made within the "Mixed Transuranic Waste Characterization" section and all subsections are consistent with current practices at LANL.	Pages 38-47: Suggested language includes replacement of Section C.3.2 "Mixed Transuranic Waste Characterization" with Section B.3.2 of Appendix B from the "Los Alamos National Laboratory Transuranic Waste Facility Permit Modification Request, Revision 0.0", August 2007 (LA-UR-07-5411). Language changes are included in the demonstration of this recommended update within Appendix G of this document.
313	Attachment C, Section C.3.2	Clarification is necessary within the last sentence of the first paragraph of this section. As drafted, the term "characterization" can be construed to mean physical laboratory analysis, which is not required for all MTRUW to determine the prohibition status with regard to LDR restrictions under Part 268. Changing "characterization" to "review" makes clear that laboratory physical analysis is not necessary to make this determination. LANL's permit application did not	Page 38: Please change the word "characterization" to "review" in the last sentence of the first paragraph. A demonstration of this change has been provided with this document within Appendix G.

Comment Number	Section of Permit	Comment	Suggested Text Change
		suggest this permit condition.	
314	Attachment C, Section C.3.2	Waste containers with mixed transuranic waste that are stored prior to real-time radiography (RTR) may contain small amounts of liquid, but that is unknown until the RTR is accomplished and verified. Suggested wording change clarifies how this condition will be met. LANL's permit application did not suggest this permit condition.	Page 39: Fourth paragraph of section should be reworded to state: "MTRUW storage at Area G that has been identified as containing free liquids will be managed with secondary containment." A demonstration of this change has been provided with this document within Appendix G.
315	Attachment C, Section C.3.2.1.2	An update to information previously submitted in LANL's permit application is necessary to reflect current practices. This represents current procedures necessary for WIPP waste certification, transport, and receiving.	Page 41: The third sentence of the first paragraph of the section should read: "MTRUW containers will be analyzed by RTR as required by the WIPP WAC and conditions contained in the CCP TRU Waste Certification Plan or most recent revisions." A demonstration of this change has been provided with this document within Appendix G.
316	Attachment C, Section C.3.3	This condition may not be consistent with the requirements or conditions of Work Plans and analytical methods stipulated under the 2005 Consent Order. Under the Order, work plans will be prepared and investigation methods approved by NMED (Section XI.B.8). The waste characterization strategy form (WCSF) will be prepared using this data as described earlier in the section. Therefore, data and methods used to prepare the WCSF have a potential to be approved under the Work Plan but not be included in the Waste Analysis Plan.	Page 49: The last sentence of section C.3.3. should read: "Remediation waste will be characterized to fully comply with all applicable waste characterization requirements, as appropriate under this Permit."
317	Attachment C, Section C.4	Discrepancy notification requirements should be made to follow regulatory language. NMED paraphrases the rule at 40 CFR § 264.72(b) in a manner that omits an important clause thus making the requirement more stringent than and inconsistent with its existing rules (see also NMSA 1978, 74-4-4D). Notification requirements should be re-drafted to be consistent with NMED rules.	Page 50: The last sentence of the second paragraph of the section should read: "Upon discovering a significant discrepancy, the Permittee must attempt to reconcile the discrepancy with the waste generator or transporter. If the discrepancy is not resolved within 15 days after receiving the waste, the Permittee must immediately submit to the Department a letter describing the discrepancy and attempts to reconcile it, and a copy of the manifest or shipping paper at issue 40 CFR § 264.72(b))."

Comment Number	Section of Permit	Comment	Suggested Text Change
318	Attachment C, Section C.5.3	Condition to "identify and document ahead of time" the goal for treatment is vague and goes beyond NMED rules. In addition, it does not specify the mechanism for determining compliance. For example, OB treatment is for the purpose of meeting LDR requirements and the relevant waste characterization information would address documenting this for the waste. Waste characterization information documents that the waste is going to the unit and needs treatment. LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	Page 52: In the third paragraph of the section, please delete the sentence "LANL will identify and document ahead of treatment all waste whose treatment goal is to meet the LDR requirements." A demonstration of this change has been provided with this document within Appendix G.
319	Attachment C, Section C.54 and proposal of Section C.5.5	Text within this section was updated using the most recent information regarding LANL's procedures for characterization of wastes to meet 40 CFR Part 264, Subparts BB and CC requirements. Addition of a section to ensure compliance with Subpart BB requirements and an update of the section on ensuring compliance with Subpart CC requirements should be made.	Pages 53-54: Suggested language changes are included in the demonstration of this recommended update within Appendix G of this document.
320	Attachment C, Tables Throughout	Suggested change corrects typographical errors throughout tables at the end of this Attachment.	Pages 56-110: Please replace "Pentrachlorophenol" with "<u>Pentachlorophenol</u>" within tables.
321	Attachment C, Table C-2	Text within Table C-2, "Descriptions of Hazardous Waste Stored at LANL," should be changed to include a more comprehensive list of potential underlying hazardous constituents. These recommended changes are updates to the previously submitted table that has been included in the Waste Analysis Plan (Attachment C) of this Permit to address underlying hazardous constituents.	Pages 60-68: The addition of "Potential Underlying Hazardous Constituents" is included in the demonstration of this recommended change within Appendix G of this document.
322	Attachment C, Table C-3	Text within Table C-3, "Descriptions of Mixed Low-Level Waste Stored at LANL," should be changed to include a more comprehensive list of potential underlying hazardous constituents. These recommended	Pages 70-75: The addition of "Potential Underlying Hazardous Constituents" is included in the demonstration of this recommended change within

Comment Number	Section of Permit	Comment	Suggested Text Change
		changes are updates to the previously submitted table that is included within the Waste Analysis Plan (Attachment C) of this Permit to address underlying hazardous constituents.	Appendix G of this document.
323	Attachment C, Table C-4	There is a typographical error within the title of the second page of this table.	Page 77: Please change "Table B-4 (continued)" to "Table C-4 (continued)".
324	Attachment C, Tables C-16, C-17 and C-18	Methods numbers for "Ignitability" and "pH" should be changed to reflect the most recent designations. These recommended changes are updates to the previously submitted table that is included within the Waste Analysis Plan (Attachment C) of this Permit to address updated method numbers.	Pages 105, 109, and 110-111: Please change the second Method Numbers for "Ignitability" to "1020B" from "1020A". Please change the first Method Numbers for "pH" to "9040C" from "9040B". A demonstration of these recommended changes has been included with this document in Appendix G.
325	Attachment D, Throughout	The references to many specific organizations within this Attachment should be updated. In most cases, a functional designation has replaced most specific organization names so that tracking of the various responsibilities within the Contingency Plan is by function rather than name.	Pages 5-77: Language changes are included in the demonstration of this recommended update within Appendix H of this document.
326	Attachment D, Section D.1.1	The information within the Attachment should be updated to state that the primary Emergency Operations Center is now located at Technical Area 69, Building 33 and that is where building emergency plans referenced within the plan are kept. This change was included with the "Los Alamos National Laboratory Hazardous Waste Facility Permit Five Class 1 Permit Modifications" submitted on December 18, 2007.	Page 10: In the third paragraph of the section, please change "EM&R Office at TA-59" to "EOC at TA-69". A demonstration of this change has been provided with this document within Appendix H.
327	Attachment D, Section D.1.1	Listing of Duty Emergency Managers should be updated to reflect most recent list of contacts. This change was included with the "Los Alamos National Laboratory Hazardous Waste Facility Permit Five Class 1 Permit Modifications" submitted on December 18, 2007.	Page 10: List of Duty Emergency Managers has been updated. A demonstration of this change has been provided with this document within Appendix H.

Comments on the draft Hazardous Waste Facility Permit for Los Alamos National Laboratory

Comment Number	Section of Permit	Comment	Suggested Text Change
328	Attachment D, Section D.1.1	Suggested change clarifies text submitted with LANL permit application. This change is consistent with the current LANL Hazardous Waste Facility Permit.	Page 11: Please change the sentence after the list of Duty Emergency Managers to read: "To assure timely notifications and immediate response during an emergency, one must call 911 or 667-6211 to obtain the on-call Duty Emergency Manager." A demonstration of this change has been provided with this document within Appendix H.
329	Attachment D, Section D.1.6.2 and Table D-2	The information within the Attachment should be updated to reflect the current location of the Occupational Medicine Central Clinic at Technical Area 3, Building 1411. This change was included with the "Los Alamos National Laboratory Hazardous Waste Facility Permit Five Class 1 Permit Modifications" submitted on December 18, 2007.	Pages 14 and 37: Please change the location of the Central Clinic from building 309 to 1411.
330	Attachment D, Section D.2.1	Clarification should be added to the section to clearly identify the location of the emergency equipment lists for the permitted units within this Permit.	Page 15: Please change the last two sentences of the section to read: "A list of emergency equipment available for use at specific hazardous and/or mixed waste management units is presented in Tables TA-3, D-1; TA-16, D-1; TA-50, D-1; TA-54, Area L, D-1; TA-54, Area G, D-2; TA-54 West, D-3, TA-55 Vault, D-1; TA-55 Building 4 Basement, D-2; TA-55 Container Storage Pad, D-3, and TA-55 Building 185, D-4. Emergency equipment listed in these tables may be replaced and/or upgraded with functionally equivalent components and equipment, as necessary, for routine maintenance and repair." A demonstration of this change has been provided with this document within Appendix H.
331	Attachment D, Section D.4.1	Clarification should be added to the section to clearly identify the location of the emergency equipment lists for the permitted units within this Permit.	Page 22: Please change the fourth sentence of the section to read: "Tables TA-3, D-1; TA-16, D-1; TA-50, D-1; TA-54, Area L, D-1; TA-54, Area G, D-2; TA-54 West, D-3, TA-55 Vault, D-1; TA-55 Building 4 Basement, D-2; TA-55 Container Storage Pad, D-3, and TA-55 Building 185, D-4 list emergency equipment available for spill control at specific units." A demonstration of this change has been provided with this document

Comment Number	Section of Permit	Comment	Suggested Text Change
			within Appendix H.
332	Attachment D, Section D.6	Clarification should be added to the section to clearly identify the location of the emergency equipment lists for the permitted units within this Permit.	Page 25: Please change the last sentence of the second paragraph to read: "<u>. Information related to the various fire alarms at the specific units is included in Tables TA-3, D-1; TA-16, D-1; TA-50, D-1; TA-54, Area L, D-1; TA-54, Area G, D-2; TA-54 West, D-3, TA-55 Vault, D-1; TA-55 Building 4 Basement, D-2; TA-55 Container Storage Pad, D-3, and TA-55 Building 185, D-4</u>." A demonstration of this change has been provided with this document within Appendix H.
333	Attachment D, Section D.11	The condition to report orally within 24 hours and in writing within 5 days implementation of the Contingency Plan makes the requirement at 40 CFR § 264.56(j) more stringent than and inconsistent with existing rules. Further, LANL's permit application did not suggest this permit condition, and no support could be found for the condition in the administrative record (see also NMSA 1978, 74-4-4D).	Page 30: Please change the first sentence of the section to read: "<u>Any emergency that requires implementation of this plan will be documented by the Group Leader (or his/her designee) responsible for the hazardous or mixed waste unit associated with the emergency, and reported in writing within 15 days of the incident to the NMED</u>." A demonstration of this change has been provided with this document within Appendix H.
334	Attachment D, Table D-1	The information within the Attachment should be updated to include current organization names and phone numbers. In most cases, a functional designation has replaced specific organization names so that identification of response groups and agencies are tracked by function rather than name.	Pages 32-33: Language changes are included in the demonstration of this recommended update within Appendix H of this document.
335	Attachment D, TA-3, Table D-1	The information within this table should be updated to reflect minor changes to the current emergency equipment available at the container storage unit at Technical Area 3.	Pages 46-47: Language changes are included in the demonstration of this recommended update within Appendix H of this document.
336	Attachment D, TA-16, Section D.3	There is a reference error within the section.	Page 49: Please change "Appendix D" to "<u>Attachment D</u>" within the section.
337	Attachment D, TA-50, D-1	The information within this table should be updated to reflect the current emergency equipment available at the container storage units at Technical Area 50. These changes are consistent with the LANL Hazardous	Pages 55-57: Language changes are included in the demonstration of this recommended update within Appendix H of this document.

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		Waste Facility Permit as modified on December 6, 2006, "Class 1 Permit Modification to the Emergency Equipment Listing in the Contingency Plan of the LANL Hazardous Waste Facility Permit".	
338	Attachment D, TA-54, Area L, Table D-1	The information within this table should be updated to reflect the current emergency equipment available at the container storage unit at Technical Area 54, Area L. These changes are consistent with the LANL Hazardous Waste Facility Permit as modified on December 6, 2006, "Class 1 Permit Modification to the Emergency Equipment Listing in the Contingency Plan of the LANL Hazardous Waste Facility Permit".	Pages 60-61: Language changes are included in the demonstration of this recommended update within Appendix H of this document.
339	Attachment D, TA-54, Area G, Table D-2	The information within this table should be updated to reflect the current emergency equipment available at the container storage units at Technical Area 54, Area G. These changes are consistent with the LANL Hazardous Waste Facility Permit as modified on December 6, 2006, "Class 1 Permit Modification to the Emergency Equipment Listing in the Contingency Plan of the LANL Hazardous Waste Facility Permit" and updates equipment at other units not included in LANL's current permit.	Pages 62-64: Language changes are included in the demonstration of this recommended update within Appendix H of this document.
340	Attachment D, TA-54 West, Table D-3	The information within this table should be updated to reflect current emergency equipment available at the container storage units at Technical Area 54, West. These changes are consistent with the LANL Hazardous Waste Facility Permit as modified on December 6, 2006, "Class 1 Permit Modification to the Emergency Equipment Listing in the Contingency Plan of the LANL Hazardous Waste Facility Permit".	Pages 65-66: Language changes are included in the demonstration of this recommended update within Appendix H of this document.
341	Attachment E, Section E.1	The information within the Attachment should be updated to include current organization names. In most cases, a functional designation has replaced specific organization names so that responsibilities can be tracked by function rather than name. This change was included with the "Los Alamos National Laboratory	Page 4: • Please change "LANL's Solid Waste Regulatory Compliance Group" in the last sentence of the first paragraph of the section to read: "LANL's hazardous waste compliance personnel".

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		Hazardous Waste Facility Permit Five Class 1 Permit Modifications" submitted on December 18, 2007.	
342	Attachment E, Section E.1	The information within the Attachment should be updated to reflect the name change of the inspection form. This change was included with the "Los Alamos National Laboratory Hazardous Waste Facility Permit Five Class 1 Permit Modifications" submitted on December 18, 2007.	Page 4: In the first sentence of the second paragraph of the section, please change "LANLs Hazardous and Mixed Waste Facility Inspection Record Form (IRF)" to read: "LANL's Hazardous Waste Facility Inspection Record Form (IRF)".
343	Attachment E, Section E.1	The suggested changes to the sentence accurately describe where the form is located within the attachment, since there is no marking of Figure C-1 on or at the beginning of the form. The changes also reflect that changes to this form may require a class 1 permit modification as an administrative and informational change as described in Appendix I to 40 CFR § 270.42. The update of the form would not change the frequency or content of the inspections conducted.	Pages 4 and 5: Within the second paragraph of the section, please change "The IRF and instructions for its completion are provided as Figure C-1 of this Attachment Section; the form may be supplemented, changed, or otherwise replaced with an equivalent form with the approval of the Department." to read: "The IRF and instructions for its completion are provided at the end of this Attachment Section; the form may be supplemented, changed, or otherwise replaced with an equivalent form through the appropriated permit modification procedures."
344	Attachment E, Section E.1.1	The information within the Attachment should be updated to include current organization names. In most cases, a functional designation has replaced specific organization names so that responsibilities can be tracked by function rather than name. This change was included with the "Los Alamos National Laboratory Hazardous Waste Facility Permit Five Class 1 Permit Modifications" submitted on December 18, 2007.	Page 5: Within the first sentence of the section, please change "Performance Surety Division's ES&H Training Group" to "central training personnel".
345	Attachment E, Section E.1.3	There is a typographical error within the section.	Page 6: Please change reference to "Table E-4" to read: "Table D-4".
346	Attachment E, Addition of a Section	The information within the Attachment should be supplemented with a new section in order to cover equipment that is not required to be inspected weekly and is documented in a different manner at LANL. The remainder of the sections within the Attachment should be renumbered to reflect this change. This is an update to language contained in LANL's permit application.	Page 6: Recommend the addition of a new section titled "E.2 ADDITIONAL INSPECTION ITEMS" The section should read: "At some of the permitted units, the items listed below are inspected monthly and documented by the individual facility operations on

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			separate forms: • Evacuation alarms • Ventilation alarms • Fire alarms • Fire pumps • Fire extinguishers • Eyewashes/safety showers These inspection items may be changed at the discretion of facility operations management. Additionally, security inspections of the fences at TA-55 and access controls at TA-3 are conducted daily."
347	Attachment E, Section E.7	The information within the Attachment should be supplemented with updates to the information that was submitted in the LANL permit application to reflect LANL procedures for inspection in accordance with 40 CFR Part 264, Subpart BB.	Page 12: Please replace section with the following: "Equipment at the facility that is subject to specific requirements for inspection, monitoring, and repair at 40 CFR, Subpart V, Part 264, Subpart BB will comply as described below: E.7.1 Requirements for Pumps In Light Liquid Service [defined by 40 CFR § 264.1031 and outlined in 40 CFR §§ 264.1052 and 264.1059] • Leak detection monitoring must be performed monthly pursuant to 40 CFR § 264.1063(b) requirements using Reference Method 21 in 40 CFR Part 60. • Visual inspection for liquids dripping from the pump seal must be performed each calendar week. • If a leak is detected, repair(s) shall be initiated no later than within 5 calendar days and completed as soon as possible, but no later than 15 calendar days. - A delay of repair is allowed if the repair is technically infeasible without shutting down the unit, and/or if the leaking equipment is isolated from the unit and does not contain or contact hazardous waste with greater than or equal to 10% by weight organics. E.7.2 Requirements for Pressure Relief Devices In Gas/Vapor Service [40 CFR §§ 264.1054 and 264.1059]

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			• Devices must be measured and monitored to ensure that they are operated with no detectable emissions (less than 500 parts per million (ppm) above background) pursuant to 40 CFR § 264.1063(c) requirements using Reference Method 21 in 40 CFR Part 60. • Measurement and monitoring will be performed as soon as practicable, but no later than 5 calendar days after a pressure release. • A delay of repair is allowed if the repair is technically infeasible without shutting down the unit, and/or if the leaking equipment is isolated from the unit and does not contain or contact hazardous waste with greater than or equal to 10% by weight organics. E.7.3 Requirements for Open-ended Valves or Lines [40 CFR § 264.1056] • Ensure that open-ended valves or lines are equipped with a cap, blind flange, or plug. • Ensure that all caps, blind flanges, or plugs are sealed except during operations requiring movement of hazardous waste through the open-ended valve or line. E.7.4 Requirements for Valves In Gas/Vapor or Light Liquid Service [defined by 40 CFR § 264.1031 and outlined in 40 CFR §§ 264.1057 and 264.1059] • Leak detection monitoring must be performed monthly pursuant to 40 CFR 264.1063(b) requirements using Reference Method 21 in 40 CFR Part 60. - If no leaks are detected for two successive months, monitoring frequency may be changed to the first month of every succeeding quarter unless a leak is detected. ▪ Should that occur, monitoring frequency must return to monthly until no leaks are detected for two successive months.

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			- Alternatively, and following notification to the Secretary, if 2% or fewer valves are found to be leaking after two consecutive quarters, monitoring frequency may be changed to once every six months. If 2% or fewer valves are found to be leaking after five consecutive quarters, monitoring frequency may be changed to annually. ▪ Should the percentage of leaking valves exceed 2%, monitoring must be performed monthly. - Alternatively, and following notification to the Secretary, no more than 2% of valves may be allowed to leak if performance testing is conducted pursuant to 264.1061 initially, annually, and upon the Secretary's request to ensure that the leak percentage is being met. ▪ Should use of this alternative discontinue, written notification to NMED must be made. • If a leak is detected, repair(s) shall be initiated no later than within 5 calendar days and completed as soon as possible, but no later than 15 calendar days. - A delay of repair is allowed if the repair is technically infeasible without shutting down the unit, if the leaking equipment is isolated from the unit and does not contain or contact hazardous waste with greater than or equal to 10% by weight organics, if purged emissions from immediate repair would exceed emissions from delaying repair, and/or if insufficient valve repair supplies exist although adequately stocked normally and the next unit shutdown is within 6 months. E.7.5 Requirements for Pressure Relief Devices In Light Liquid Service, Flanges and Other Connectors [40 CFR § 264.1058] • Monitoring must be conducted pursuant to 40 CFR 264.1063(b) requirements within 5 days of identifying a potential leak by visual, audible, olfactory, or other method. • If a leak is detected by an instrument reading of 10,000 ppm or greater, repairs shall be initiated no later than within 5 calendar

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			days and completed as soon as possible, but no later than 15 calendar days. No monitoring is required for inaccessible, glass, or glass-lined connectors."
348	Attachment E, Section E.8	The information within the Attachment should be supplemented as an update to the information that was submitted in the LANL permit application to reflect LANL procedures for inspection in accordance with 40 CFR Part 264, Subpart CC.	Page 12: Please replace the section with the following: "The hazardous wastes stored in containers that may be subject to 20.4.1 NMAC, Part 264, Subpart CC, "Air Emission Standards for Tanks, Surface Impoundments, and Containers" based on the applicability criteria specified in 20.4.1 NMAC § 264.1080. Subpart CC standards for containers require that owners or operators shall control air pollutant emissions for containers of hazardous waste subject to this provision. General inspection provisions detailed in 20.4.1 NMAC § 264.1088 require that the facility develop, implement, and incorporate in the facility inspection plan a written plan and schedule to perform inspections and monitoring of air emission control equipment used to comply with any container requirements. As detailed in 20.4.1 NMAC § 264.1086 the defined Container Levels that may be present at the storage areas are defined as follows: *Container Level 1*- The volume of the container in direct contact with waste is greater than $0.1m^3$ and less than or equal to $0.46m^3$, or the volume of the container is greater than $0.46m^3$ and not in light material service, as defined by 20.4.1 NMAC § 265.1081. The container must also be either: (1) compliant with the applicable Department of Transportation (DOT) regulations (20.4.1 NMAC § 264.1086(f)); (2) equipped with a cover and closure devices that form a continuous barrier so that, when closed, no visible holes, gaps, or open spaces into the interior of the container are evident; or (3) an open-top container with an organic vapor suppressing barrier that precludes exposure of waste to the atmosphere. *Container Level 2*- The volume of the container in direct contact with waste is greater than $0.46m^3$ and is in light material service, as defined by 20.4.1 NMAC § 265.1081. The container also must be either: (1) compliant with the applicable DOT regulations (20.4.1

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			NMAC § 264.1086(f)); (2) capable of operation with no detectable organic emissions as determined by the procedure specified at 264.1086(g); or (3) demonstrated to be vapor-tight within the past 12 months using 40 CFR 60, Appendix A, Method 27 and the procedure specified at 264.1086(h). E.8.1 Container Level 1 Inspection Requirements Inspection requirements for Container Level 1 are as follows (20.4.1 NMAC § 264.1086(c)(4)): • If waste is already in the container when received: - On or before the date the container is accepted at the facility, a visual inspection will be performed of the container, cover, and closure devices for visible cracks, holes, gaps, and other open spaces into the interior when cover and closure devices are secured in closed position. - If a defect is detected, repair(s) must be initiated no later than within the first 24 hours and completed as soon as possible, but no later than within 5 calendar days. ▪ If defect(s) are not completely repaired within 5 calendar days, waste must be removed and the container not used until the defect(s) have been repaired. • If waste remains in storage for greater than or equal to 1 year: - A visual inspection of the container will be performed at initial receipt and at least once every 12 months. - If a defect is detected, repair(s) must be initiated no later than within the first 24 hours and completed as soon as possible, but no later than within 5 calendar days. ▪ If defect(s) are not completely repaired within 5 calendar days, waste must be removed and the container not used until the defects have been repaired. • Covers and closure devices used must be appropriately designed and must be composed of suitable materials to minimize exposure of waste to the atmosphere and maintain equipment integrity

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			(20.4.1 NMAC § 264.1086(c)(2)). • Covers and closure devices must be installed, secured, and maintained in closed position, except when: adding or removing material; performing routine activities (other than waste transfer) inside the container; operating pressure relief and safety devices to maintain and return container to safe internal pressure, pursuant to 20.4.1 NMAC § 264.1086(c)(3). E.8.2 Container Level 2 Inspection Requirements Inspection requirements for Container Level 2 are as follows: • If waste is already in the container when received (20.4.1 NMAC § 264.1086(d)(4)): - On or before the date the container is accepted at the facility, a visual inspection will be performed of the container, cover, and closure devices for visible cracks, holes, gaps, and other open spaces into the interior when cover and closure devices are secured in closed position. - If a defect is detected, repair(s) must be initiated no later than within the first 24 hours and completed as soon as possible, but no later than within 5 calendar days. ▪ If defect(s) are not completely repaired within 5 calendar days, waste must be removed and the container not used until the defects have been repaired. • If waste remains in storage for greater than or equal to 1 year (20.4.1 NMAC § 264.1086(d)(4)): - A visual inspection of the container will be performed at initial receipt and at least once every 12 months. - If a defect is detected, repair(s) must be initiated no later than within the first 24 hours and completed as soon as possible, but no later than within 5 calendar days. ▪ If defect(s) are not completely repaired within 5 calendar days, waste must be removed and the container not used until the defects have been repaired. • Covers and closure devices must be installed, secured, and maintained in closed position, except when: adding or removing

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			material; performing routine activities (other than waste transfer) inside the container; operating pressure relief and safety devices to maintain and return container to safe internal pressure, pursuant to 20.4.1 NMAC § 264.1086(d)(3). The process of waste transference in or out of containers must ensure that exposure of hazardous waste to the atmosphere is minimized, in accordance with 20.4.1 NMAC § 264.1086(d)(2)."
349	Attachment E, Inspection Record Form	The information within the Attachment should be updated to contain the current inspection form. This change was included with the "Los Alamos National Laboratory Hazardous Waste Facility Permit Five Class 1 Permit Modifications" submitted on December 18, 2007.	Pages 13-19 Please replace the inspection record form with the most recent version of the form. A replacement for this form has been provided with this document as Appendix I.
350	Attachment E, TA-55, Section E.1.1	The information within the Attachment should be updated to reflect and clarify the inspection procedure at the Technical Area 55, Vault container storage unit. This is an update to language contained for informational purposes only in LANL's permit application.	Page 33: The second paragraph within the section should be changed to read: "All container transfers are noted on the Vault Traffic Log Book maintained at TA-55. If mixed waste is not currently being stored in the Vault the Inspection Record Form (IRF) will be marked "No Use" and completed according to the IRF instructions."
351	Attachment E, TA-55, Section E.1.1	The information within the Attachment should be updated to reflect and clarify the inspection procedure at the Technical Area 55, Vault container storage unit. This is an addition to the language contained for informational purposes only in LANL's permit application.	Pages 33: The last paragraph of the section should read: "The Vault has extreme security and safeguards; therefore, there is no potential for container breaches through inadvertent and uncontrolled access to the Vault. During period of lock down no Vault access is allowed. As a safeguard, the Vault is always monitored with continuous air monitors for radionuclides. Consequently any mixed waste release in the Vault would be detected."
352	Attachment E, TA-55, Section E.4	The information within the Attachment should be updated to include current organization names. In most cases, a functional designation has replaced specific organization names so that responsibilities can be tracked by function rather than name. This is an update to language contained in LANL's permit application.	Page 36: Please change the reference: "the Facility and Waste Operations Division (FMU-7)" to "facility operations management".
353	Attachment E, TA-55, Section E.4	The information within the Attachment should be updated because communication equipment is inspection each operational day or weekly. This is an	Page 36: Please move the reference to "Communication equipment" from

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		update to language contained in LANL's permit application.	Section TA-55, E.4 to Section E.3.1 within the daily and weekly bulleted lists.
354	Attachment F, List of Abbreviations/ Acronyms	The information in this list should be updated to remove organizations that other comments within this Attachment and throughout this Permit have been removed.	Page 3: Please remove the following acronym/abbreviations and their definitions from the list: FWO, PS-13, S-10, and SWRC.
355	Attachment F, Section F.1	The information within the Attachment should be updated to include current organization names. In most cases, a functional designation has replaced specific organization names so that responsibilities can be tracked by function rather than name. There is also a typographical error within the paragraph; "Appendix D" should be Attachment D".	Page 4: Please change the first paragraph of the section to read: "Waste management activities and responsibilities at specific hazardous and/or mixed waste management units are handled by the appropriate LANL division or group. Waste management personnel within the Environmental Projects Associate Directorate are responsible for most centralized waste management activities at LANL. Hazardous waste compliance personnel are responsible for providing waste management regulatory guidance to all LANL personnel and operations. Other personnel at LANL who may provide assistance in various waste management activities are discussed with the following paragraph and in Attachment D (Contingency Plan)."
356	Attachment F, Section F.1	The information within the Attachment should be updated to include current organization names. In most cases, a functional designation has replaced specific organization names so that responsibilities can be tracked by function rather than name.	Page 4: Please change the second paragraph of the section to read: "Laboratory-contracted support services (e.g., KBR-Shaw-LATA [KSL]) provide trained personnel to assist in waste-handling activities. Radiation protection, health physics, occupational medicine, industrial hygiene and safety, nuclear criticality safety, occurrence reporting, hazardous material response, meteorology and air quality, water quality and hydrology, ecology, and hazardous waste compliance personnel are trained in their respective specialties to provide emergency response support. LANL security provides workers trained in traffic and site-access control."
357	Attachment F, Section F.1	The information within the Attachment should be updated to include current organization names. In most cases, a functional designation has replaced specific organization names so that responsibilities can be tracked by function rather than name.	Page 4: Please change the last paragraph of the section to read: "Emergency Management and Response (EM&R) personnel provide emergency planning and response at LANL and have the overall responsibility for LANL's Emergency Management Plan (EMP)

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			training. Central training personnel are responsible for the analysis, design, development, and delivery of LANL-wide environment, safety, and health (ES&H) training. Courses on hazardous and/or mixed waste are designed with substantial input from hazardous waste compliance personnel, hazardous waste operations personnel, and other subject matter experts, as appropriate."
358	Attachment F, Sections F.2 and F.2.1	The information within the Attachment should be updated to include current organization names. In most cases, a functional designation has replaced specific organization names so that responsibilities can be tracked by function rather than name.	Pages 5, 6, & 7: In this section please change references "PS-13" to "central training personnel".
359	Attachment F, Section F.2	The information within the Attachment should be updated to include current organization names. In most cases, a functional designation has replaced specific organization names so that responsibilities can be tracked by function rather than name.	Page 6: Please change reference to "S-10" in the sixth paragraph of the section to "Hazardous Materials Response personnel".
360	Attachment F, Section F.2.1	The information within the Attachment should be updated to include current organization names. In most cases, a functional designation has replaced specific organization names so that responsibilities can be tracked by function rather than name.	Page 7: Please change the reference "SWRC" in the second paragraph of the section to "hazardous waste compliance personnel".
361	Attachment F, Section F.2.4	The information within the Attachment should be updated to include current organization names. In most cases, a functional designation has replaced specific organization names so that responsibilities can be tracked by function rather than name.	Page 8: Please change the first two sentences of the section to read: "The Central Training Division directs the LANL-wide ES&H training program. The Division Leader (or designee) serves as the Training Coordinator for LANL-wide waste management training."
362	Attachment F, Section F.3	There is a typographical error within the last sentence of the first paragraph.	Page 8: Please change the reference "Appendix D" to "Attachment D".
363	Attachment F, Section F.3	There is a typographical error within the first sentence of the last paragraph of the section.	Page 9: Please change the reference "Appendix E" to "Attachment D".
364	Attachment F, TAs 3, 16, 550, 54 and 55	In this Attachment these sections add no additional data to the section. Also, this change is consistent with omissions that NMED made for other Attachments within this Permit (e.g. Attachment C).	Pages 13-17: Suggest removing these pages from Attachment F.

Comments on the draft Hazardous Waste Facility Permit for Los Alamos National Laboratory

Comment Number	Section of Permit	Comment	Suggested Text Change
365	Attachment G, TA-3, Section G.1.1	The information within this Attachment should be updated to reflect the removal of all references to the Actinide Source Term Waste Test Program (STTP) which is no longer in existence and to update current processes, storage capacities and all types of containers that may be used in Room 9010. STTP descriptions were included in the LANL permit application for TA-3, Building 29; however, since the drafting of the application, the program has concluded. The proposal of new language, not included in the application is consistent with management of waste at the other rooms used for container storage at TA-3, Building 29 and throughout container storage units at LANL.	Pages 3, 4, 5, 8, and 10: References to STTP were deleted and processes, storage capacities, and storage container descriptions of Room 9010 were updated. Specific language changes are included in the demonstration of this recommended update within Appendix J of this document.
366	Attachment G, TA-3, Section G.1.2	The information within this Attachment should be updated to include all types of containers that may be used in processes, and the storage capacity of Room 9020. The proposed new language that was not included in the application is consistent with management of waste at the other rooms used for container storage at TA-3, Building 29 and throughout container storage units at LANL.	Page 5 Please add the following to the end of the section: "<u>The maximum storage capacity of this unit is 5,300 gallons or 96 55-gallon drum equivalents. Storage containers include 5, 10, 12, 15, 30, 55 and 85 gallon drums. Additionally, solid items greater than the above mentioned sizes (and free of liquids) will be staged and wrapped tightly in plastic prior to being shipped in DOT approved containers</u>." Language changes are included in the demonstration of this recommended update within Appendix J of this document.
367	Attachment G, TA-3, Section G.1.3	The information within this Attachment should be updated to include all types of containers that may be used in processes, and the storage capacity of Room 9030. The proposed new language that was not included in the application is consistent with management of waste at the other rooms used for container storage at TA-3, Building 29 and throughout container storage units at LANL.	Page 6: Please add the following after the second sentence of the section: "<u>The CSU is used to store containers of hazardous and mixed waste that do not contain liquids. The maximum storage capacity of this unit is 2000 gallons, or 36 55-gallon drum equivalents. Storage containers include 5, 10, 12, 15, 30, 55 and 85 gallon drums. Additionally, solid items greater than the above mentioned sizes (and free of liquids) will be staged and wrapped tightly in plastic prior to being shipped in DOT approved containers</u>." Language changes are included in the demonstration of this recommended update within Appendix J of this document.
368	Attachment G, TA-3, Section	The information within this Attachment should be updated to delete text that describes security posts and	Page 6:

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	G.1.3	chains will be installed. At the time the LANL permit application was drafted, there were plans to install security posts and chains. Installation of this equipment was deemed not necessary due to the demarcation of the unit and the limited access to the unit.	Please delete the last sentence of the paragraph. Language changes are included in the demonstration of this recommended update within Appendix J of this document.
369	Attachment G, TA-3, Section G.2.2	The information within the Attachment should be updated to include regulatory language at 40 CFR § 264.14(c). This is an update to language contained in LANL's permit application.	Page 7: Please change the third and add a fourth sentence in the second paragraph of the section: "The legends on the signs indicate "Danger: Hazardous Waste Storage Area" and "Unauthorized Personnel Keep Out." Existing signs with a legend other than "Danger-Unauthorized Personnel Keep Out" may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion, and that entry onto the active portion can be dangerous." Language changes are included in the demonstration of this recommended update within Appendix J of this document.
370	Attachment G, TA-3, Section G.2.2	The information within this Attachment should update security and access section to reflect current operations at facility. This is an update to language contained in LANL's permit application. This description is provided for informational purposes only.	Page 7: The third and fourth sentences of the third paragraph of the section should be updated to read: "One combined pedestrian and vehicular unmanned badge reader entry gate is located at the northwest corner of the TA-3-29 fence line. Another unmanned badge reader pedestrian gate is located at the southeast corner of the building fence line." Language changes are included in the demonstration of this recommended update within Appendix J of this document.
371	Attachment G, TA-3, Section G.2.2	The information within this Attachment should be updated to recommend removing reference to Attachment A in this section to correct a typographical error.	Page 7: In the last sentence of section, delete "Attachment A" and the parenthesis from the section as follows: "In accordance with 20 NMAC 4.1, Subpart IX, 270.14(b)(19)(viii) [1-1-97], the locations of the security fences, access gates, and guard and entry stations at TA-3-29 are shown in ~~Attachment A (~~Figure 2-1 in Permit Part 2~~)~~." Language changes are included in the demonstration of this recommended update within Appendix J of this document.
372	Attachment G, TA-3, Section G.2.2	The information within the Attachment should be updated to include a designation for security personnel rather than an organization name so that responsibilities	Page 7: Change reference from "PTLA" to "security personnel".

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		can be tracked by function. This is an update to language contained in LANL's permit application.	
373	Attachment G, TA-3, Section G.2.3.1	The information within the Attachment should be updated to reflect the removal of all references to the Actinide Source Term Waste Test Program (STTP) which is no longer in existence. STTP descriptions were included in the LANL permit application for TA-3, Building 29; however, since the drafting of the application, the program has concluded. The proposal of new language, not included in the application is consistent with management of waste at the other rooms used for container storage at TA-3, Building 29 and throughout container storage units at LANL. This is an update to language contained in LANL's permit application and is provided for informational purposes only.	Pages 8-9: Three references to STTP within the section were deleted. Language changes are included in the demonstration of this recommended update within Appendix J of this document.
374	Attachment G, TA-3, Section G.2.3.3	The information within the Attachment should be updated to include current organization names. In most cases, a functional designation has replaced specific organization names so that responsibilities can be tracked by function rather than name. This is an update to language contained in LANL's permit application.	Page 9: Please change reference from "Emergency Response Office" to "Emergency Response personnel". Language changes are included in the demonstration of this recommended update within Appendix J of this document.
375	Attachment G, TA-3, Section G.2.3.4	The information within the Attachment should be corrected from the language submitted with LANL's permit application.	Page 9: Please changed the first sentence to read: "Information on aisle space and storage configurations for the TA-3-29 CSU is presented in Part 3 of this Permit." Language changes are included in the demonstration of this recommended update within Appendix J of this document.
376	Attachment G, TA-3, Section G.2.4.1	The information within the Attachment should be updated to reflect the removal of all references to the Actinide Source Term Waste Test Program (STTP) which is no longer in existence. STTP descriptions were included in the LANL permit application for TA-3, Building 29; however, since the drafting of the application, the program has concluded. The proposal	Pages 10 and 11: References to STTP were deleted throughout the section. Specific language changes are included in the demonstration of this recommended update within Appendix J of this document.

Comment Number	Section of Permit	Comment	Suggested Text Change
		of new language, not included in the application is consistent with management of waste at the other rooms used for container storage at TA-3, Building 29 and throughout container storage units at LANL. The description was provided for informational purposes only.	
377	Attachment G, TA-3, Section G.2.4.1	The information within this Attachment should be updated to include the use of hand trucks, dollies or casters when moving waste containers and delete the practice of using lift trucks and replace pallet jack with forklift. This is an update to language contained in LANL's permit application.	Page 11: Updated unloading loading practices to be consistent with current practices for processes. Specific language changes are included in the demonstration of this recommended update within Appendix J of this document.
378	Attachment G, TA-50, Section G.1	The information within this Attachment should be updated to add transuranic waste and mixed waste prohibited item disposition and repackaging operations to current processes at TA-50-69 Indoor container storage unit. Since the drafting of the 2002 TA-50 application, operational needs have changed and TA-50-69 is currently permitted for and is used as a facility where items that are prohibited from disposition at the Waste Isolation Pilot Plant (WIPP) are remediated. These prohibited items include free liquids within containers and it is necessary for the continued use of the facility to maintain the ability to store liquids at TA-50-69. All containers storing free liquids will be managed on secondary containment that meets the requirements of 40 CFR § 264.175. Additionally, waste management procedures at TA-50-69 encompass the controls necessary for the storage of containers with free liquids because the current LANL Hazardous Waste Facility Permit allows for the storage of liquids in containers at the facility.	Page 17: Please change the last sentence of the first paragraph to read: "<u>The facility was first used to size reduce mixed TRU waste in 1982. The original function of the WCRRF has since been expanded to include other activities related to hazardous and mixed waste management including waste characterization, TRU/MTRU prohibited item disposition and repackaging operations and experimental process demonstration support</u>." Language changes are included in the demonstration of this recommended update within Appendix J of this document.
379	Attachment G, TA-50, Section G.2.1	The information within this Attachment should be updated to clarify where container handling and inspection requirements are located within the Permit rather than reference LANL's permit application.	Page 19: Please change first sentence to read: "<u>Handling and inspection requirements for containers stored within the TA-50 CSU are</u>

Comment Number	Section of Permit	Comment	Suggested Text Change
			presented in Part 3 and Attachment E." Language changes are included in the demonstration of this recommended update within Appendix J of this document.
380	Attachment G, TA-50, Section G.2.2	The information within the Attachment should be updated to include regulatory language at 40 CFR § 264.14(c). This is an update to language contained in LANL's permit application.	Page 19: Please change the third and add a fourth sentence in the second paragraph of the section: "The legends on the signs indicate "Danger: Hazardous Waste Storage Area" and "Unauthorized Personnel Keep Out." Existing signs with a legend other than "Danger-Unauthorized Personnel Keep Out" may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion, and that entry onto the active portion can be dangerous." Language changes are included in the demonstration of this recommended update within Appendix J of this document.
381	Attachment G, TA-50, Section G.2.2	The information within this Attachment should be updated to reflect the new centralized Operations Center located at TA-50-84 that provides access control requirements at TA-50. This is an update to language contained in LANL's permit application. The description was provided for informational purposes only.	Page 20: Please change the final paragraph of the section to read: "TA-50-69 access is controlled through a centralized Operations Center located in TA-50-84. A chain is installed at the East end of the operations area and adjacent to TA-50-84 and is posted with the bilingual hazardous waste unit sign." Language changes are included in the demonstration of this recommended update within Appendix J of this document.
382	Attachment G, TA-50, Section G.2.3.3	The information within this Attachment should be updated to reflect the new centralized Operations Center located at TA-50-84 that provides access control requirements at TA-50. Additionally, the information should be updated to include current organization names. In most cases, a functional designation has replaced specific organization names so that responsibilities can be tracked by function rather than name. These are updates to language contained in LANL's permit application. The description was provided for informational purposes only.	Page 23: Please change the section to read: "Whenever waste is being handled at the TA-50 CSUs, the Operations Center located in TA-50-84 is aware of all personnel in the area. Workers have immediate access to internal alarms or telephones either directly or through visual or voice contact with another individual. In the event of an emergency, communication equipment allows personnel to contact the centralized Operations Center, the Emergency Management and Response personnel, and/or the Central Alarm Station operator. In addition to the communications and alarm systems described in Section G.2.3.1, on-site personnel may carry pagers so that they can be contacted on-site and LANL emergency support personnel at all times." Language changes are included in the demonstration of this

Comment Number	Section of Permit	Comment	Suggested Text Change
			recommended update within Appendix J of this document.
383	Attachment G, TA-50, Section G.2.4.1	Since the drafting of the 2002 TA-50 application, operational needs have changed and TA-50-69 is currently permitted for and is used as a facility where items that are prohibited from disposition at the Waste Isolation Pilot Plant (WIPP) are remediated. These prohibited items include free liquids within containers and it is necessary for the continued use of the facility to maintain the ability to store liquids at TA-50-69. All containers storing free liquids will be managed on secondary containment that meets the requirements of 40 CFR § 264.175. Additionally, waste management procedures at TA-50-69 encompass the controls necessary for the storage of containers with free liquids because the current LANL Hazardous Waste Facility Permit allows for the storage of liquids in containers at the facility.	Page 23: Please change the last paragraph of the section to read: "Waste management personnel at TA-50 do not perform loading/unloading operations during precipitation events. All waste containers at the TA-50 CSUs are handled in a manner that will not cause them to rupture or leak, as required in 40 CFR § 264.173(b). In the case of spills, on-site personnel follow site procedures, emergency response plans, and implement the Attachment D (*Contingency Plan*), if necessary." Language changes are included in the demonstration of this recommended update within Appendix J of this document.
384	Attachment G, TA-54, Section G.1	The information to this Attachment should be updated to clarify where other container storage information is located within the Permit.	Page 32: Please change the second sentence of the first paragraph to read; "This Attachment provides an overview of current facility operations and waste management practices at Technical Area (TA) 54 at Los Alamos National Laboratory (LANL) and complements Parts 3 and 14 of the Permit." Language changes are included in the demonstration of this recommended update within Appendix J of this document.
385	Attachment G, TA-54, Section G.1	The information in this Attachment should be updated to reflect that there is one CSU at TA-54 Area L and not two. This is an update to language contained in LANL's permit application.	Page 32: The second to the last sentence of the first paragraph should be changed to read: "There is one CSU at Area L, nine CSUs at Area G, and two CSUs at TA-54 West." Language changes are included in the demonstration of this recommended update within Appendix J of this document.
386	Attachment G, TA-54, Section G.1.	There is a typographical error "These CSUs are described in below". Recommend removing sentence to avoid confusion regarding location of descriptions of	Page 32: Please delete the sentence: "These CSUs are described in below."

Comment Number	Section of Permit	Comment	Suggested Text Change
		units at TA-54.	Language changes are included in the demonstration of this recommended update within Appendix J of this document.
387	Attachment G, TA-54, Section G.1.1	The information to this Attachment should be updated to clarify where other container storage information and inspection requirements are located within the Permit.	Page 33: Please change the first sentence to read: "Handling and inspection requirements for containers stored within the TA-54 CSUs are presented in Part 3 and Attachment E of this Permit." Language changes are included in the demonstration of this recommended update within Appendix J of this document.
388	Attachment G, TA-54, Section G.1.2	The information within this Attachment should be updated to reflect current security and access procedures. This is an update to language contained in LANL's permit application and this description is provided for informational purposes only.	Page 33: Please change the second paragraph of the section to read: "Depending on national security conditions, a guard station will be manned west of the TA-54 timed vehicle-access control gate. Guard stations control public access on Pajarito Road east and west of TA-54. Therefore, only properly identified LANL and DOE employees or individuals under their escort will have access to TA-54." Also, delete the first sentence of the third paragraph that states: "During low national security conditions, any access to the TA-54 administrative area for Areas L and G is limited by a timed vehicle-access control gate on the entrance road to TA-54." Language changes are included in the demonstration of this recommended update within Appendix J of this document.
389	Attachment G, TA-54, Section G.1.2	The information within this Attachment should be updated to reflect new access control requirements. This is an update to language contained in LANL's permit application and this description is provided for informational purposes only	Pages 33-34: Please change the last two paragraphs of the section to read: "Anyone entering the fenced Area L and Area G waste management areas from the TA-54 administrative area must be "badged in" before proceeding. Badging in is the process of identifying the person, assessing his/her security and training status using DOE security badges, and determining the need for an escort. Authorized personnel may enter the fenced portions of Areas L and G only after negotiating additional access controls such as the operations center gate, in the form of walk-through turnstiles, and motorized vehicle gates. Each turnstile and vehicle gate is equipped with a badge reader to ensure authorized access only. Resident personnel are required to badge in upon arrival and prior to

Comment Number	Section of Permit	Comment	Suggested Text Change
			leaving TA-54, Areas L and G, and TA-54 West. Nonresident personnel and visitors are required to badge or sign in and out at an access control point at the facility operations center. Depending on their level of training, nonresident personnel may be required to be escorted in order to access TA-54, Areas L and G, and TA-54 West. Access to the Area L, Area G, and TA-54 West CSUs requires additional controls. These controls are described in Sections G.2.1, G.3.1, and G.4.1 of this Attachment Section, respectively." Language changes are included in the demonstration of this recommended update within Appendix J of this document.
390	Attachment G, TA-54, Section G.1.3.1	The information within this Attachment should be updated to reflect additional emergency equipment listings are located in Attachment D.	Page 34: Attachment E has been changed to Attachment D. Language changes are included in the demonstration of this recommended update within Appendix J of this document.
391	Attachment G, TA-54, Section G.1.3.3	The information within this Attachment should be updated to reflect the addition of alphanumeric pagers. This is an update to language contained in LANL's permit application.	Page 35: Added "alphanumeric pagers" to available equipment. Language changes are included in the demonstration of this recommended update within Appendix J of this document.
392	Attachment G, TA-54, Section G.1.4.2	The information within this Attachment should be updated to add the run-on and runoff information from LANL's permit application that is currently referenced within the section. This inclusion of language from LANL's permit application is consistent with other sections of this Attachment and makes the information readily available within the Permit.	Page 36: Please replace the sections with: "At TA-54, controlling run-on and runoff at the locations where waste management operations regularly occur is accomplished by appropriate contouring of surface areas and the use of control structures such as drainage channels, berms, and culverts. Canopies, dome structures, and other buildings are used to eliminate or minimize contact between run-on and waste containers. In addition, all stored waste containers are elevated or are placed in areas with sloped floors and sumps to provide protection from liquids that could be introduced through fire-suppression activities. Existing operational controls include inspecting run-on and runoff controls in accordance with Attachment E (Inspection Plan) and maintaining the structural run-on/runoff controls, as necessary. Run-on/runoff management methods specific to the Area L, Area G, and TA-54 West CSUs are discussed below. This information is provided to meet the requirements of 20.4.1 NMAC § 270.14(b)(8)(ii) [6-14-00].

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			G.1.4.2.1 Area L The Area L CSU relies on structural and operational controls that are designed to divert storm water to a single outfall. They include asphaltic-concrete channels, a 12-inch corrugated pipe storm drain to convey storm water to a single outfall at the northeast corner of Area L, and a contoured paved surface to direct storm water to the conveyances. Snow removal is also performed to minimize run-on and runoff. G.1.4.2.2 Area G In certain drainage areas at Area G, structures have been provided to efficiently channel storm water to the ephemeral streams draining the mesa. These structures include asphaltic-concrete and concrete drainage channels, a weir, riprap-lined channels, a retention dam, berms, and culverts. Roads and drive pads are configured, by grading and paving, to carry storm water away from the areas of active vehicular and loading operations. Silt fences and other erosion control structures are established throughout the drainage areas in locations prone to erosion or affected by heavy runoff during storm events. G.1.4.2.3 TA-54 West The foundation at the RANT Facility (TA-54-38) is above grade to prevent run-on of storm water. Storm drains and trenches are included in the building design to collect any precipitation or snowmelt that may enter the facility through the loading bays. The Outdoor CSU storage pad is sloped away from the RANT Facility building towards the edges of the pad, allowing storm water to flow to the edges of the pad. All containers of waste stored at the TA-54 West CSUs are located in areas with sloped floors and sumps or are elevated by design, on dollies, or on pallets. This prevents the containers from coming into contact with liquids. All waste-containing drums and SWBs on the Outdoor CSU storage pad are covered by a canopy or tarp to prevent contact with precipitation. Loaded TRUPACT-II containers may also be stored on the Outdoor CSU storage pad until shipment to WIPP occurs. TRUPACT-II containers are leak-resistant containers with an acceptable leak rate of 2.6 x 10-7 cubic centimeters of helium per second, which prevents the containerized waste within

Comment Number	Section of Permit	Comment	Suggested Text Change
			the TRUPACT-II containers from contact with precipitation. Positive surface drainage throughout TA-54 West directs potential run-on away from the TA-54 West CSUs. A drainage swale and curbing direct storm water runoff toward an outfall on the northeast side of the storage pad." Specific language changes are included in the demonstration of this recommended update within Appendix J of this document.
393	Attachment G, TA-54, Section G.1.4.5	The information within this Attachment should be updated to reflect training requirements presented in Attachment F of this Permit.	Page 39 Please change the last sentence of the paragraph of the section to read: "Training requirements are presented in Attachment F of this Permit." Language changes are included in the demonstration of this recommended update within Appendix J of this document.
394	Attachment G, TA-54, Section G.1.4.6	The information in this Attachment should be updated to include additional characterization equipment at Pad 10 and clarify that not all characterization trailers are equipped with HEPA filtration systems. This is an update to language contained in LANL's permit application and is presented for informational purposes only.	Page 39: Please change the third paragraph of the section to read: "The transuranic waste characterization facilities on Pad 10 (former Pads 2 and 4) may include glove boxes, hoods, real-time radiography, non-destructive assay equipment, and heated storage for managing mixed waste. The transuranic waste characterization facilities transportainers will provide external confinement for those operations." Language changes are included in the demonstration of this recommended update within Appendix J of this document.
395	Attachment G, TA-54, Section G.2	The information within this Attachment should be updated to reflect one CSU at Area L This is an update to language contained in LANL's permit application.	Page 41: Please change the first and second sentence of the section to read: "The following provides specific information on current facility operations and waste management practices at the Area L CSU. This includes a discussion of security and access control, preparedness and prevention, hazards prevention, and design information for the Area L CSU." Language changes are included in the demonstration of this recommended update within Appendix J of this document.
396	Attachment G, TA-54, Section G.2.1	The information within this Attachment should be updated to reflect one CSU at Area L. This is an update to language contained in LANL's permit application.	Page 42: Please change the first sentence of the section to read: "Security at the Area L CSU is maintained by both artificial and natural barriers."

Comment Number	Section of Permit	Comment	Suggested Text Change
			Language changes are included in the demonstration of this recommended update within Appendix J of this document.
397	Attachment G, TA-54, Section G.2.1	The information within the Attachment should be updated to include regulatory language at 40 CFR § 264.14(c). This is an update to language contained in LANL's permit application.	Page 42: Please change the fifth and add a sixth sentence to the paragraph: "The legends on the signs indicate "Danger—Hazardous Waste Storage Area" and "Unauthorized Personnel Keep Out." Existing signs with a legend other than "Danger-Unauthorized Personnel Keep Out" may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion, and that entry onto the active portion can be dangerous." Language changes are included in the demonstration of this recommended update within Appendix J of this document.
398	Attachment G, TA-54, Section G.2.1	The information within this Attachment should be updated to reflect one CSU at Area L and to reflect the new access requirements. This is an update to language contained in LANL's permit application. The description was provided for informational purposes only.	Page 42: Please change the last four sentences of the section to read: "Access to the Area L CSU is controlled by a gate. Authorized resident personnel must badge in/out at the magnetic badge reader to enter or leave through the gate. Individuals who do not have a DOE-issued badge must be escorted after signing the visitor's log located in the TA-54 Operations Center. These procedures limit access to the Area L CSU and provide a means of tracking personnel on site, should there be an emergency or evacuation." Language changes are included in the demonstration of this recommended update within Appendix J of this document.
399	Attachment G, TA-54, Section G.2.1	There is a typographical error within the second to the last sentence of the section.	Page 42: Spacing should be corrected so that sentence does not have a carriage return in the middle of it.
400	Attachment G, TA-54, Section G.2.2	The information within this Attachment should be updated to reflect one CSU at Area L.	Page 42: Please change the first sentence of the section to read: "The following presents information on the emergency equipment available at the Area L CSU to comply with the preparedness and prevention requirements of 20.4.1 NMAC, Subpart V, Part 264, Subpart C [6-14-00]." Language changes are included in the demonstration of this recommended update within Appendix J of this document.

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401	Attachment G, TA-54, Section G.2.3	The information within this Attachment should be revised to reflect comments made to Section G.1.4.2 to address runoff and run-on controls.	Page 44: Please change last sentence of the first paragraph to read: "Prevention of run-on and runoff at Area L is discussed in Section G.1.4.2 of the TA-54 Section of this Attachment." Language changes are included in the demonstration of this recommended update within Appendix J of this document.
402	Attachment G, TA-54, Section G.2.4	The information within this Attachment should be updated to reflect one CSU at Area L. This is an update to language contained in LANL's permit application.	Page 44: Please change the first two sentences of the section to read: "The following describes the CSU at Area L (Figure 2-5). The CSU is the aboveground CSU within the fence." Language changes are included in the demonstration of this recommended update within Appendix J of this document.
403	Attachment G, TA-54, Section G.2.4	The information within this Attachment should be updated to reflect updated descriptions, dimension and locations for pads 32 and 36 in line with the most recent Permit modifications. Language for the addition of the containment structure to Pad 32 is derived from the permit modification approved in July 2007.	Page 44: Please add the following text to Section G.2.4.1, TA-54-32: "The pad will also contain a temporary modular containment structure moved from TA-54-36 when the permit modification approved in July 2007 is implemented. This modular structure provides waste containment and environmental protection for waste sampling and repackaging activities. The structure is constructed of 4-ft-wide, 8- or 4-ft-long, 22-gauge stainless-steel panels that interlock in a self-supporting structural steel framework. The structure is 28 ft wide by 28 ft long by 12 ft high. It is equipped with a 20-ft-long observation room that attaches to the main enclosure. The main enclosure has two personnel doors and an 8-ft-wide roll-up door. The floor in the main enclosure is the concrete pad covered with multiple layers of heavy duty plastic sheeting that are taped together and are extended approximately 1 ft up the sides of the structure." Please delete the existing reference to the Perma-Con structure in the section for TA-54-36 to reflect this move. Specific language changes are included in the demonstration of this recommended update within Appendix J of this document.
404	Attachment G, TA-54, Section G.2.4.2	The information within this Attachment should be updated to remove this section of the Permit as the storage shafts are no longer active. This is an update to language contained in LANL's permit application. This unit has been closed and closure certification report has	Page 51: Please delete section. Language changes are included in the demonstration of this recommended update within Appendix J of this document.

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		been submitted to NMED for approval "LANL Closure Certification Report for the Technical Area 54, Area L, Storage Shafts 36 and 37 Container Storage Unit," Revision 0.0, September 2006.	
405	Attachment G, TA-54, Section G.3.1	The information within the Attachment should be revised to include regulatory language at 40 CFR § 264.14(c). This is an update to language contained in LANL's permit application.	Page 52: Please change the fifth and add a sixth sentence to the section: "The legends on the signs indicate "Danger—Hazardous Waste Storage Area" and "Unauthorized Personnel Keep Out." Existing signs with a legend other than "Danger-Unauthorized Personnel Keep Out" may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion, and that entry onto the active portion can be dangerous." Language changes are included in the demonstration of this recommended update within Appendix J of this document.
406	Attachment G, TA-54, Section G.3.3	The information within this Attachment should be revised to reflect comments made to Section G.1.4.2 to address runoff and run-on controls.	Page 54: Please change the last sentence of the first paragraph of the section to read: "Prevention of run-on and runoff at Area G is discussed in Section G.1.4.2 of this TA-54 Container Management Attachment." Language changes are included in the demonstration of this recommended update within Appendix J of this document.
407	Attachment G, TA-54, Section G.3.4.3	The information within this Attachment should be revised to be consistent with other changes made by NMED to reflect that liquids are removed and collected for characterization as described in Permit Part 3, Section 3.7.	Page 60 Please change the last sentence of the section to read: "These liquids are removed and collected for characterization, as described in Permit Part 3, Section 3.7." Language changes are included in the demonstration of this recommended update within Appendix J of this document.
408	Attachment G, TA-54, Section G.3.4.4	Information within this Attachment should be updated to reflect that Pad 10 has been constructed. This is an update to language contained in LANL's permit application.	Page 60: Language changes are included in the demonstration of this recommended update within Appendix J of this document.
409	Attachment G, TA-54, Section G.4.1	The information within the Attachment should be revised to include regulatory language at 40 CFR § 264.14(c). This is an update to language contained in	Page 67: Please change the fifth and add a sixth sentence to the section: "The legends on the signs indicate "Danger—Hazardous Waste Storage

Comment Number	Section of Permit	Comment	Suggested Text Change
		LANL's permit application.	Area" and "Unauthorized Personnel Keep Out." Existing signs with a legend other than "Danger-Unauthorized Personnel Keep Out" may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion, and that entry onto the active portion can be dangerous." Language changes are included in the demonstration of this recommended update within Appendix J of this document.
410	Attachment G, TA-54, Section G.4.2	The information within this Attachment is based on the permit application. NMED rules at 264.32 require that a fire extinguisher be used, but do not prescribe the manufacturer or exact type (i.e., ABC or halon). Since the permit application was submitted, LANL now uses ABC fire extinguishers instead of halon fire extinguishers as they are appropriate for the types of wastes stored. As NMED incorporated the application language verbatim into the Permit, recommend deleting the term "halon" insofar as the type of fire extinguisher is not specifically restricted by the regulation.	Page 68: Please change types of fire extinguishers to "ABC rated". Language changes are included in the demonstration of this recommended update within Appendix J of this document.
411	Attachment G, TA-54, Section G.4.3	The information within this Attachment should be revised to reflect comments made to Section G.1.4.2 to address runoff and run-on controls.	Page 69: Please change the last sentence of first paragraph to read: "Prevention of run-on and runoff at TA-54 West is discussed in Section G.1.4.2 of this TA-54 Container Management Attachment." Language changes are included in the demonstration of this recommended update within Appendix J of this document.
412	Attachment G, TA-54, Section G.4.4.1	The information within this Attachment should be updated to be consistent with other changes made by NMED to reflect that liquids are removed and collected for characterization as described in Permit Part 3, Section 3.7.	Page 70: Please change the last sentence of section to read: "Potential liquids that accumulate within the sump area (e.g., precipitation, liquids resulting from fire-suppression activities) are removed and collected for characterization, as described in Permit Part 3, Section 3.7." Language changes are included in the demonstration of this recommended update within Appendix J of this document.
413	Attachment G, TA-55, Section G.1.1	The information within this Attachment should be updated to include all types of containers that may be used in processes. This is an update to language	Page 75: Please add sentence to section: "Additionally, items greater than the above mentioned sizes (and free of liquids) will be staged and wrapped

Comment Number	Section of Permit	Comment	Suggested Text Change
		contained in LANL's permit application.	tightly in plastic prior to being shipped in DOT approved containers." Language changes are included in the demonstration of this recommended update within Appendix J of this document.
414	Attachment G, TA-55, Section G.2	The information within this Attachment should be updated to reflect consistency with current operations. This is an update to language contained in LANL's permit application.	Page 78: Please add to fourth bullet of list: "Or a 55 or 85 gal drum holding a lesser volume container." Language changes are included in the demonstration of this recommended update within Appendix J of this document.
415	Attachment G, TA-55, Section G.2	The information in this Attachment should be updated to reflect current storage operations. This is an update to language contained in LANL's permit application.	Page 78: Within the last paragraph of the section, please add the following sentence: "Drummed waste containers are placed on pallets, drum size roller dollies, or stored in self containment structures." Language changes are included in the demonstration of this recommended update within Appendix J of this document.
416	Attachment H, Table H-2	The table of regulatory references (Table H-2) and the location of where the requirement is addressed was developed for the application and adds no clear benefit to the Permit. It should be removed as an update to language submitted with LANL's permit application. If included, Table H-2 should be clearly labeled as "Informational Only".	Pages 2-23: Please delete Table H-2 and all references to this table within the Attachment or include reference "Informational Only".
417	Attachment H	The information within the Attachment should be corrected from the language submitted with LANL's permit application.	Page 4: Please change the second sentence of the third paragraph to read: "The cementation unit pencil tanks were constructed in 1985, installed from 1987-88, and were considered existing tanks until new components were installed in 1996."
418	Attachment H	There is a typographical error within the third sentence of the third paragraph of the section.	Page 4: Please delete the word "application" from the third sentence of paragraph three of the section.
419	Attachment H	The information within the Attachment should be updated to reflect that LANL no longer plans to install the pencil tank component of the storage tank system.	Page 4: Please delete the last sentence of the third paragraph which states: "The pencil tanks will be constructed and, thus, are subject to new tank system regulations in accordance with the requirements of 20.4.1

Comment Number	Section of Permit	Comment	Suggested Text Change
			NMAC §264.192 [6-14-00]."
420	Attachment H, Section H.1.1	The information within the Attachment should be corrected from the language submitted with LANL's permit application.	Page 7: Last sentence of the fifth paragraph of the section should be changed to read: "The glass columns are equipped with a vacuum sparging system designed to homogeneously mix the evaporator bottoms prior to sampling or transfer."
421	Attachment H, Section H.1.2.1	There is a typographical error in the last paragraph of the page.	Page 8: Last paragraph, third line:- remove the "." between the words "vent.line".
422	Attachment H, Section H.1.3	The information within the Attachment should be updated to reflect that LANL no longer plans to install the pencil tank component of the storage tank system.	Pages 9-11: Delete Section H.1.3 and Section H.1.3.1 from the Attachment.
423	Attachment H, Section H.2.3	The information within the Attachment should be updated to reflect that LANL no longer plans to install the pencil tank component of the storage tank system.	Page 13: Please delete Section H.2.3 from the Attachment.
424	Attachment I	The information in the Attachment should be updated to reference a section within the Permit rather than LANL's permit application.	Page 4: Please change the second sentence of the Attachment to read: "This Attachment provides an overview of current facility operations and waste management practices for the open burning (OB) units at the Technical Area (TA) 16 Burn Ground and complements the information provided in Parts 6 and 12 of this Permit."
425	Attachment I	Information about applicable regulatory references should be removed for consistency. Table G-1 is not included within the Attachment and the reference to it should also be removed.	Page 4: Please delete the last sentence of the first paragraph: "Table G-1 (LANL, 2003) summarizes applicable regulatory references for miscellaneous units and the corresponding location where the requirement is addressed in this Attachment."
426	Attachment I	The information within the Attachment should be updated to include current organization names. In most cases, a functional designation has replaced specific organization names so that responsibilities can be tracked by function rather than name.	Table of Abbreviations/Acronyms: Please delete the reference to "Protection Technology Los Alamos." Page 4: Please change the second paragraph of the Attachment to read: "The TA-16 Burn Ground and the OB units (Figure 12-1) are managed by Los Alamos National Laboratory's (LANL's) high explosive engineering personnel, which are responsible for the safe treatment,

Comment Number	Section of Permit	Comment	Suggested Text Change
			storage, and handling of high explosives (HE)-contaminated waste material generated by the HE production facilities." Page 12, section I.2.6: Please delete the reference to "Protection Technology Los Alamos."
427	Attachment I, Section I.2.2	The information within the Attachment should be updated to reflect that the TA-16 Burn Ground no longer has an NMED Air Quality Bureau permit but general guidelines that existed within the Permit are still followed and are outlined in Part 6 of this Permit.	Page 9: Please change the second to the last sentence of the third paragraph from: "The environmental conditions (e.g., wind speed, fire conditions) required by the NMED Air Quality Bureau will be met before the waste is staged." to "The environmental conditions (e.g., wind speed, fire conditions) required by Part 6 of this Permit will be met before the waste is staged."
428	Attachment I, Section I.2.3	The information within the Attachment should be clarified from language submitted in LANL's permit application. Change clarifies that usually only large incombustible pieces of equipment are staged at the TA-16-388 Flash Pad.	Page 9: The first sentence of the fourth paragraph of the section should read: "The most difficult wastes to stage are the incombustible solids treated at the TA-16-388 Flash Pad."
429	Attachment I, Section I.2.3	The information within the Attachment should be changed to be consistent with the requirements of this Permit and allow for the characterization of treatment residues using methods as allowed for in the Waste Analysis Plan (Attachment C) and as included in LANL's permit application.	Page 10: The fourth sentence in the first paragraph of the section should read: "Burning will treat a number of waste constituents (e.g., HE, solvents) but metals (if present) will not be destroyed; they can remain in the residues which are characterized in accordance with Attachment C (Waste Analysis Plan) of this Permit."
430	Attachment I, Section I.2.3	The information described in a portion of this Attachment was provided for informational purposes with LANL's permit application. The last sentence in the third paragraph has been revised because RCRA rules do not require all vegetation around the burn ground to be removed, and it can be read to imply that this is a requirement. The change reflects LANL's practices and clarifies that this language was informational only, and not a RCRA requirement. It may be impossible and impractical to remove all vegetation at a site.	Page 10: Please change the last sentence of the third paragraph to read: "To reduce potential fire danger, LANL uses its best efforts to mow or remove vegetation around the OB unit as practical during times of high fire danger."
431	Attachment I, Section I.2.6	The information within the Attachment should be updated to include current organization names. In most	Page 12:

Comment Number	Section of Permit	Comment	Suggested Text Change
		cases, a functional designation has replaced specific organization names so that responsibilities can be tracked by function rather than name.	Please change fourth sentence of the third paragraph to read: "In addition, entry into the Burn Ground is through an industrial fence with access granted through a station controlled by HE Area personnel."
432	Attachment I, Section I.2.7.1	Editorial clarification should be added to the section to clearly identify the location of the emergency equipment list for the TA-16 open burning units within this Permit.	Page 13: Please change second and third sentences of the first paragraph to read: "Emergency equipment at the Burn Ground is discussed in the following sections and is summarized in the TA-16 specific Table D-1 in Attachment D (Contingency Plan). LANL-wide emergency equipment available for use at any of the LANL waste management units is presented in Table D-2 of the Attachment D, General Section."
433	Attachment I, Section I.2.7.5	Editorial clarification should be added to the end of the sentence to identify the reference citation.	Page 14: Please change sentence to read: "Information on support agreements with outside agencies, as required 40 CFR § 264.37, is presented in Section 2.0 of the LANL General Part B (LANL, 2003b)."
434	Attachment I, Section I.3	Editorial comment to add a reference to the Attachment.	Page 16: Please add the following to the reference section: "LANL, 2003b, "Los Alamos National Laboratory General Part B Permit Renewal Application," Revision 2.0, August 2003, LA-UR-03-5923, Los Alamos National Laboratory, Los Alamos, New Mexico."
435	Attachment J, Section J.1	Information within the Attachment should be corrected from language submitted in LANL's permit application.	Page 4: Please change "1991" in the first paragraph of the section to "1988".
436	Attachment J, Section J.1	The information within the Attachment was incorporated from LANL's permit application, and reflected the practice at the time the application was submitted. The revised language clarifies how cement is transferred into the glovebox and drums at TA-55.	Page 5: Sixth paragraph of the section should be changed from: "The cement is transferred into the glovebox and drums from a hopper/screw feeder through rubber tubing through rubber tubing" to be ""The cement is transferred into the glovebox and drums from a bulk silo via a screw feeder. The screw feeder places the cement into a hopper where the cement is transferred to the drum via a second screw feeder where the last 4 feet of the discharge is through a plastic discharge hose."
437	Attachment J, Section J.5	There is a typographical error within the third sentence of the third paragraph of the section.	Page 9: Please delete the word "application" from the first sentence of paragraph one of the section.
438	Attachment N	The requirement to distribute the Contingency Plan within 5 calendar days may be too short for LANL to	Page 2, Row 2.11.3, Contingency Plan distribution:

<table>
<tr><th>Comment Number</th><th>Section of Permit</th><th>Comment</th><th>Suggested Text Change</th></tr>
<tr><td></td><td></td><td>meet (e.g., the Permit is issued on the Friday before a holiday closure). The proposed change addresses the potential for conflict with a 5 calendar day requirement.</td><td>Please change the due date to: “Within 5 working days of the effective date of this Permit”.</td></tr>
<tr><td>439</td><td>Attachment N</td><td>Information within the Attachment should be updated to reflect suggested changes to Part 12 of this Permit.</td><td>Please delete the following row within the table:
<table>
<tr><th>Permit Section</th><th>Requirement</th><th>Due date</th></tr>
<tr><td>12.1.6</td><td>Annual report on the TA-16 OB unit soil sampling results</td><td>Every August 31st</td></tr>
</table>
Please replace the above line with the following rows under Other Submittals:
<table>
<tr><th>Permit Section</th><th>Requirement</th><th>Due date</th></tr>
<tr><td>12.1</td><td>Report on analytical results for the TA-16 OB unit</td><td>Within 60 days after sampling activities</td></tr>
<tr><td>12.1</td><td>Second report on analytical results for the TA-16 OB unit sampling including comparison of results</td><td>90 days after sampling activities</td></tr>
</table></td></tr>
<tr><td>440</td><td>Attachment O, Table O-1</td><td>Information within the Attachment should be changed to reflect whether the unit is located indoors or outdoors to aid with the applicability of closure requirements located in Permit Part 9.</td><td>Table O-1, Throughout:
Location designations as indoor or outdoor for units are included in the demonstration of this recommended update within Appendix K of this document.</td></tr>
<tr><td>441</td><td>Attachment O, Table O-1</td><td>Information for TA-3-29 Rooms 9010, 9020 and 9030 should be corrected. These rooms should be presented as one container storage unit and revised to remove reference to a program that was located within Room 9010 that has been concluded. This description is consistent with LANL’s permit application.</td><td>Table O-1, TA-3-29 Room 9010:
Please change unit identifier to be “<u>TA-3-29 Rooms 9010, 9020, and 9030</u>” and the reference “Contains Actinide Source Term Waste Test Program (STTP)” should be deleted.
Language changes are included in the demonstration of this recommended update within Appendix K of this document.</td></tr>
<tr><td>442</td><td>Attachment O, Table O-1</td><td>Information for TA-3-29 Room 9020 should be combined with above.</td><td>Table O-1, TA-3-29 Room 9020:
Please delete this row.
Language changes are included in the demonstration of this recommended update within Appendix K of this document.</td></tr>
</table>

Comments on the draft Hazardous Waste Facility Permit for Los Alamos National Laboratory

Comment Number	Section of Permit	Comment	Suggested Text Change
443	Attachment O, Table O-1	Information for TA-3-29 Room 9030 should be combined with above.	Table O-1, TA-3-29 Room 9030: Please delete this row. Language changes are included in the demonstration of this recommended update within Appendix K of this document.
444	Attachment O, Table O-1	Information for TA-16-388 should be corrected to include the correct operating capacity for the unit. Consistent with maximum quantities used for air deposition and dispersion modeling.	Table O-1, TA-16-388: Capacity should be added as "250 pounds combustible material or 100 gallons of liquids per burn." Language changes are included in the demonstration of this recommended update within Appendix K of this document.
445	Attachment O, Table O-1	Information for TA-16-399 should be corrected to include the correct operating capacity for the unit. Consistent with maximum quantities used for air deposition and dispersion modeling.	Table O-1, TA-16-399: Capacity should be added as "1,000 pounds per burn." Language changes are included in the demonstration of this recommended update within Appendix K of this document.
446	Attachment O, Table O-1	Information for TA-50-69 Indoor Area should be corrected from LANL's permit application. Since the drafting of the 2002 TA-50 application, operational needs have changed for the facility and the unit is currently used to remediate items that are prohibited from disposition at the Waste Isolation Pilot Plant (WIPP). These prohibited items include free liquids within containers and it is necessary for the continued use of the facility to maintain the ability to store liquids at TA-50-69. This will be the function of the facility for the foreseeable future. In addition, the LANL's current Hazardous Waste Facility Permit allows for the storage of free liquids at these units, therefore, waste management procedures at TA-50-69 encompass the controls necessary for the storage of containers with free liquids.	Table O-1, TA-50-69 Indoor Area: Please remove "Non-liquid waste only" from the General Information. Language changes are included in the demonstration of this recommended update within Appendix K of this document.
447	Attachment O, Table O-1	Information for TA-50-69 Outdoor Area should be corrected from LANL's permit application. Since the drafting of the 2002 TA-50 application, operational needs have changed for the facility and it is currently used to remediate items that are prohibited from	Table O-1, TA-50-69 Outdoor Area: Please remove "Non-liquid waste only" from the General Information. Language changes are included in the demonstration of this recommended update within Appendix K of this document.

<table>
<tr><th>Comment Number</th><th>Section of Permit</th><th>Comment</th><th>Suggested Text Change</th></tr>
<tr><td></td><td></td><td>disposition at the Waste Isolation Pilot Plant (WIPP). These prohibited items include free liquids within containers and it is necessary for the continued use of the facility to maintain the ability to store liquids at TA-50-69. This will be the function of the facility for the foreseeable future.

In addition, the LANL's current Hazardous Waste Facility Permit allows for the storage of free liquids at these units, therefore, waste management procedures at TA-50-69 encompass the controls necessary for the storage of containers with free liquids.</td><td></td></tr>
<tr><td>448</td><td>Attachment O, Table O-1</td><td>Information for the TA-54 West, Indoor CSU should be changed to be consistent with conditions in Part 14 of this Permit.</td><td>Table O-1, TA-54 West, Indoor CSU:

Please remove "Non-liquid waste only" from the General Information.

Language changes are included in the demonstration of this recommended update within Appendix K of this document.</td></tr>
<tr><td>449</td><td>Attachment O, Table O-1</td><td>Information for the TA-54 West, Outdoor CSU should be changed to be consistent with conditions in Part 14 of this Permit.</td><td>Table O-1, TA-54 West, Outdoor CSU:

Please remove "Non-liquid waste only" from the General Information.

Language changes are included in the demonstration of this recommended update within Appendix K of this document.</td></tr>
<tr><td>450</td><td>Attachment O, Table O-1</td><td>Information within this Attachment needs to be clarified consistent with the permit application to separate the TA-55-4 Storage Tank System and the TA-55-4 Cementation Unit.</td><td>Table O-1, TA-55-4 Mixed Waste Storage/Treatment Tanks:

Please change this row to be two rows, one for each unit:
<table>
<tr><th>Unit Identifier</th><th>Process Codes</th><th>Operating Capacity</th><th>General Information</th></tr>
<tr><td>TA-55-4 Mixed Waste Storage Tank System</td><td>S02</td><td>137 gal</td><td>TA-55-4, Room 401

Unit divided into two components (Evaporator Glovebox Storage Tank System and Cementation Storage Tank System)

Indoor storage unit</td></tr>
</table></td></tr>
</table>

Comment Number	Section of Permit	Comment	Suggested Text Change
			<table><tr><td>TA-55-4 Cementation Unit</td><td>T04</td><td>150 gal/day</td><td>Stabilization treatment unit Indoor storage unit</td></tr></table> Language changes are included in the demonstration of this recommended update within Appendix K of this document.
451	Attachment O, Table O-1	Information should be added to be consistent with the permit application for TA-55-185 for clarification.	Table O-1, TA-55-185: Please add "Located west of TA-55-4", and "Non-liquid waste only" to the General Information for this unit. Language changes are included in the demonstration of this recommended update within Appendix K of this document.
452	Attachment O, Table O-3	Information that is tracked within this table should be for information purposes only because there is no regulatory requirement that could be found to support this information's inclusion within the Permit. Changes to the table and inaccuracies should not require permit modification from LANL.	Recommend deleting this table or inserting an asterisk * to designate to that Table O-3 is informational only. Language changes are included in the demonstration of this recommended update within Appendix K of this document.
453	Attachment O, Table O-3	Not all process codes identified within the table are defined. This information is not included in LANL's permit application.	Table O-3, Process code list: Please add the following codes to the list: "S03-waste pile" and "S04-surface impoundment" Language changes are included in the demonstration of this recommended update within Appendix K of this document.
454	Attachment O, Table O-3	Information in attachment should be corrected to contain the correct process code for TA-16, Material Disposal Area P. This information is not included in LANL's permit application.	Table O-3, TA-16 Material Disposal Area P: Please change Process Code from "D80" to "S03".
455	Attachment O, Table O-3	Additional information listed for the TA-55-4 Oxygen Sparging Treatment Furnace should show status of the unit.	Table O-3, TA-55-4, Oxygen Sparging Treatment Furnace: Please add to General Information Cell "Unit closed NMED certified closure on February 4, 1998." Language changes are included in the demonstration of this recommended update within Appendix K of this document.
456	Attachment O, Table O-3	Information should be added to the listing for TA-55-4, B38 to clarify that Area 2 is the same unit and mention	Table O-3, TA-55-4, B38: Please add to General Information Cell "Unit closed NMED certified

<table>
<tr><th>Comment Number</th><th>Section of Permit</th><th>Comment</th><th>Suggested Text Change</th></tr>
<tr><td></td><td></td><td>its closure date.</td><td><u>closure on January 3, 2006.</u>"

Language changes are included in the demonstration of this recommended update within Appendix K of this document.</td></tr>
<tr><td>457</td><td>Attachment O, Table O-3</td><td>Recommend removing duplicative information within this table. .</td><td>Table O-3, TA-55-4, basement, Area 2:

Please delete this row because it is covered by the previous row within the table.

Language changes are included in the demonstration of this recommended update within Appendix K of this document.</td></tr>
<tr><td>458</td><td>Attachment O, Table O-4</td><td>Information within this table states that the permitted unit undergoing closure includes the entirety of Material Disposal Area (MDA) G. MDA G. However, this includes the Solid Waste Management Units (SWMU) at Area G and encompasses a much larger area than the regulated unit that will undergo RCRA closure (i.e., one shaft and one pit). Although this regulated unit is not an active unit, it meets the definition of a permitted unit insofar as RCRA permitted units include units that are undergoing closure or post-closure care. Permitted units, however, do not equate to SWMUs and could lead to conflicting and confusing requirements, MDA-G includes intermingled SWMUs that are also undergoing corrective action. A RCRA-permitted unit does not include SWMUs, and as applied at LANL is confusing because these SWMUs are also undergoing corrective action under the Order on Consent.</td><td>Table O-4, TA-54 Material Disposal Area G:

Recommend changing the row as follows:
<table>
<tr><th>Unit Identifier</th><th>Process Codes</th><th>Regulatory Status</th><th>General Information</th></tr>
<tr><td>TA-54 Area G Landfill</td><td>D99</td><td>Permitted</td><td>Unit consists of Shaft 124 and Pit 29</td></tr>
</table>
Language changes are included in the demonstration of this recommended update within Appendix K of this document.</td></tr>
<tr><td>459</td><td>Attachment O, Table O-4</td><td>Information within this table states that the permitted unit undergoing closure includes the entirety of Material Disposal Area (MDA) H. The area identified as the Solid Waste Management Units (SWMU) MDA H encompasses a larger area than the regulated unit undergoing RCRA closure (e.g., one shaft). NMED has approved alternative closure of this shaft under 40 CFR § 264.110(c) with the enforceable requirements of the Consent Order. Therefore, this shaft is not required to also meet closure requirements under 40 CFR Part 264,</td><td>Table O-4, TA-54 Material Disposal Area H:

Recommend changing the row as follows:
<table>
<tr><th>Unit Identifier</th><th>Process Codes</th><th>Regulatory Status</th><th>General Information</th></tr>
<tr><td>TA-54 Area H Landfill</td><td>D99</td><td>Permitted</td><td>Unit consists of Shaft 9.</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Comment Number</th><th>Section of Permit</th><th>Comment</th><th>Suggested Text Change</th></tr>
<tr><td></td><td></td><td>Subpart G. All of the SWMUs at this MDA are undergoing corrective action under the Order on Consent. .</td><td>Language changes are included in the demonstration of this recommended update within Appendix K of this document.</td></tr>
<tr><td>460</td><td>Attachment O, Table O-4</td><td>Information within this table states that the permitted unit undergoing closure includes the entirety of Material Disposal Area (MDA) L. The area identified as the Solid Waste Management Units (SWMU) at MDA L encompasses a much larger area than the regulated unit that will undergo RCRA closure (i.e., 22 shafts and two surface impoundments). Although the regulated unit it is not an active unit, it meets the definition of a permitted unit insofar as RCRA's definition includes units that are undergoing closure or post-closure care. MDA L includes intermingled SWMUs from units that are also undergoing corrective action. A RCRA-permitted unit does not include SWMUs, and as applied at LANL is confusing because these SWMUs are undergoing corrective action under the Order on Consent.</td><td>Table O-4, TA-54 Material Disposal Area L:

Recommend changing the row as follows:
<table>
<tr><th>Unit Identifier</th><th>Process Codes</th><th>Regulatory Status</th><th>General Information</th></tr>
<tr><td>TA-54, Area L Landfill</td><td>D99</td><td>Permitted</td><td>Unit consists of “Shafts 1, 13-17, and 19-34 and Impoundments B and D.</td></tr>
</table>
Language changes are included in the demonstration of this recommended update within Appendix K of this document.</td></tr>
<tr><td>461</td><td>Attachment O, Table O-5</td><td>Information that is tracked within this table should be for information purposes only because there is no regulatory requirement that could be found to support this information’s inclusion within the Permit. Changes to the interim status units within this table and inaccuracies should not require permit modification from LANL.</td><td>Recommend deleting this table or inserting an asterisk * to designate to that Table O-5 is informational only.

Language changes are included in the demonstration of this recommended update within Appendix K of this document.</td></tr>
<tr><td>462</td><td>Attachment O, Table O-5</td><td>The title of the table and the process code list should be updated to reflect the addition of closing interim status units suggested by the next comment.</td><td>Table O-5, Title and Process code list:

1. Recommend changing the title of the table to: “Interim Status Units”.

2. Please add the following codes to the list: “S99-other storage”

Language changes are included in the demonstration of this recommended within Appendix K of this document.</td></tr>
<tr><td>463</td><td>Attachment O, Table O-5</td><td>Information within the table does not include a complete list of interim status units at LANL as there are two storage units that are undergoing closure.</td><td>Table O-4, Addition:</td></tr>
</table>

<table>
<tr><th>Comment Number</th><th>Section of Permit</th><th>Comment</th><th>Suggested Text Change</th></tr>
<tr><td></td><td></td><td>LANL has recommended these additional units so that the table is consistent and represents a complete list of interim status units.

However, these units are interim status and the tracking of them should be for information purposes only because there is no regulatory requirement that could be found to support this information's inclusion within the Permit. Changes to this table and inaccuracies should not require a permit modification from LANL.</td><td>
<table>
<tr><th>Unit Identifier</th><th>Process Codes</th><th>Regulatory Status</th><th>General Information</th></tr>
<tr><td>TA-54, Area L, Storage Shafts 36 & 37</td><td>S99</td><td>Interim Status</td><td>Referred to as Lead Stringer Shafts</td></tr>
<tr><td>TA-54, Area G, Storage Shafts 145 & 146</td><td>S99</td><td>Interim Status</td><td></td></tr>
</table>
Language changes are included in the demonstration of this recommended update within Appendix K of this document.
</td></tr>
<tr><td>464</td><td>Attachment P, Table P-1</td><td>Sites subject to the corrective action requirements of Module VIII are listed in Tables A and C of Module VIII (Table B contains a high priority subset of the sites listed in Table A). These sites are identified as SWMUs. Corrective action units that are not listed in Module VIII are identified as AOCs.

Table P-1 contains sites that are identified as AOCs but which are listed in Table A or Table C of Module VIII and should be identified on Table P-1 as SWMUs. These sites are identified within the suggested change column along with the corresponding Table in Module VIII.</td><td>Table P-1 should be revised to identify these sites as SWMUs.
<table>
<tr><td>SWMU 03-052(f)</td><td>Listed in Table C</td></tr>
<tr><td>SWMU 16-005(a)</td><td>Listed in Table C</td></tr>
<tr><td>SWMU 16-005(c)</td><td>Listed in Table C</td></tr>
<tr><td>SWMU 16-005(d)</td><td>Listed in Table C</td></tr>
<tr><td>SWMU 16-005(e)</td><td>Listed in Table C</td></tr>
<tr><td>SWMU 16-005(g)</td><td>Listed in Table A</td></tr>
<tr><td>SWMU 16-005(h)</td><td>Listed in Table C</td></tr>
<tr><td>SWMU 16-005(j)</td><td>Listed in Table C</td></tr>
<tr><td>SWMU 16-005(k)</td><td>Listed in Table C</td></tr>
<tr><td>SWMU 16-005(l)</td><td>Listed in Table C</td></tr>
<tr><td>SWMU 16-005(m)</td><td>Listed in Table C</td></tr>
<tr><td>SWMU 16-005(n)</td><td>Listed in Table A</td></tr>
<tr><td>SWMU 16-024(e)</td><td>Listed in Table C</td></tr>
<tr><td>SWMU 39-002(a)</td><td>Listed in Table A</td></tr>
</table>
A summary of the requested changes to Tables P-1, P-2, and P-3 is included with this document as Appendix L.</td></tr>
</table>

<table>
<tr><th>Comment Number</th><th>Section of Permit</th><th>Comment</th><th>Suggested Text Change</th></tr>
<tr><td>465</td><td>Attachment P, Table P-1</td><td>Sites subject to the corrective action requirements of Module VIII are listed in Tables A and C of Module VIII (Table B contains a high priority subset of the sites listed in Table A). These sites are identified as SWMUs. Corrective action units that are not listed in Module VIII are identified as AOCs.
Table P-1 contains sites that are identified as SWMUs but which are not listed in Table A or Table C of Module VIII and should be identified on Table P-1 as AOCs. These sites are identified within the suggested change column.</td><td>Table P-1 should be revised to identify these sites as AOCs.
<table>
<tr><td>AOC 00-030(n)</td></tr>
<tr><td>AOC 00-030(o)</td></tr>
<tr><td>AOC 00-030(p)</td></tr>
<tr><td>AOC C-21-001</td></tr>
<tr><td>AOC 35-018(a)</td></tr>
<tr><td>AOC 43-001(a2)</td></tr>
</table>
A summary of the requested changes to Tables P-1, P-2, and P-3 is included with this document as Appendix L.</td></tr>
<tr><td>466</td><td>Attachment P, Tables P-1, P-2, and P-3</td><td>Sites that are not listed in Tables A and C of Module VIII do not require a Class III permit modification to remove them from these tables once NMED has determined that no further corrective actions are required. Sites not listed in Module VIII and which have already been issued certificates of completion should be listed in either Table P-2 or Table P-3, depending on whether controls are required.

Table P-1 contains sites that are not listed in Table A or Table C of Module VIII and which have been issued certificates of completion by NMED under the Consent Order. These sites should not be listed in Table P-1, but should be listed in Table P-2, Corrective Action Complete With Controls, or Table P-3, Corrective Action Complete Without Controls. These sites are identified within the suggested change column, along with the date that the certificates of completion were issued by NMED.</td><td>Table P-1 should be revised by removing these sites and, as necessary, Tables P-2 and P-3 should be revised to include or delete these sites, as indicated below.
<table>
<tr><td>AOC 00-010(b)</td><td>Certificate of completion, corrective action complete without controls issued 2/23/06 (already listed in Table P-3)</td></tr>
<tr><td>AOC 00-030(k)</td><td>Certificate of completion, corrective action complete without controls issued 12/6/06 (not listed in Table P-3 but should be)</td></tr>
<tr><td>AOC 00-033(b)</td><td>Certificate of completion, corrective action complete without controls issued 2/23/06 (should be listed in Table P-3)</td></tr>
<tr><td>AOC 00-034(a)</td><td>Certificate of completion, corrective action complete without controls issued 12/6/06 (not listed in Table P-3 but should be)</td></tr>
<tr><td>AOC 03-001(i)</td><td>Certificate of completion, corrective action complete with controls issued 10/13/06 (currently listed in Table P-3, should be listed in Table P-2)</td></tr>
<tr><td>AOC C-19-001</td><td>Certificate of completion, corrective action complete without controls issued 6/27/06 (already listed in Table P-3).</td></tr>
</table>
A summary of the requested changes to Tables P-1, P-2, and P-3 is included with this document as Appendix L.</td></tr>
<tr><td>467</td><td>Attachment P,</td><td>Table P-1 includes some AOCs that were previously</td><td>Table P-1 should be revised by removing these sites and Table P-3</td></tr>
</table>

<table>
<tr><th>Comment Number</th><th>Section of Permit</th><th>Comment</th><th>Suggested Text Change</th></tr>
<tr><td></td><td>Table P-1 and P-3</td><td>negotiated by NMED and LANL to have approved decisions of “no further action (NFA).” In the March 2005 Order on Consent, NMED specifically recognized that AOCs identified in a January 21, 2005 letter from EPA to NMED that received a prior NFA decision from EPA had no further corrective action requirements (See Section III.A of the Consent Order). These AOCs should be removed from Table P-1.

Table P-1 contains sites that are not listed in Table A or Table C of Module VIII and which were previously determined to require no further action by EPA. These sites should not be listed in Table P-1, but should be listed in Table P-3, Corrective Action Complete Without Controls. These sites, which are all included in the January 21, 2005 EPA letter, are identified within the suggested change column.</td><td>should be revised by adding AOC 52-002(g).
<table>
<tr><td>AOC C-20-001</td><td>On EPA 1/21/05 letter (already listed in Table P-3)</td></tr>
<tr><td>AOC C-20-002</td><td>On EPA 1/21/05 letter (already listed in Table P-3)</td></tr>
<tr><td>AOC C-20-003</td><td>On EPA 1/21/05 letter (already listed in Table P-3)</td></tr>
<tr><td>AOC 43-001(b1)</td><td>On EPA 1/21/05 letter (already listed in Table P-3)</td></tr>
<tr><td>AOC C-51-001</td><td>On EPA 1/21/05 letter (already listed in Table P-3)</td></tr>
<tr><td>AOC C-51-002</td><td>On EPA 1/21/05 letter (already listed in Table P-3)</td></tr>
<tr><td>AOC 52-002(g)</td><td>On EPA 1/21/05 letter (should be listed in Table P-3)</td></tr>
<tr><td>AOC 63-002</td><td>On EPA 1/21/05 letter (already listed in Table P-3)</td></tr>
</table>
A summary of the requested changes to Tables P-1, P-2, and P-3 is included with this document as Appendix L.</td></tr>
<tr><td>468</td><td>Attachment P, Table P-1 and P-3</td><td>Once NMED has determined that no further corrective action is necessary, a Class 3 permit modification should not be required to remove sites from Tables A and C of Module VIII. Sites not listed in Module VIII and for which NMED made a determination of NFA prior to the effective date of the Consent Order should be listed in Table P-3.

Table P-1 contains sites that are not listed in Table A or Table C of Module VIII and which were determined to require no further action by NMED prior to the effective date of the Consent Order. These sites should not be listed in Table P-1, but should be listed in Table P-3, Corrective Action Complete Without Controls. These sites are identified within the suggested change column.</td><td>Table P-1 should be revised by removing these sites.
<table>
<tr><td>AOC 21-030</td><td>NFA approved 6/21/04 as part of approval of Voluntary Corrective Action Report for SWMU 21-024(f) and AOCs C-21-015 and 21-030 (already listed in Table P-3)</td></tr>
<tr><td>AOC 73-007</td><td>NFA approved 3/28/01 as part of approval of RFI Report for Consolidated Unit 73-005-99 (already listed in Table P-3)</td></tr>
</table>
A summary of the requested changes to Tables P-1, P-2, and P-3 is included with this document as Appendix L.</td></tr>
<tr><td>469</td><td>Attachment P,</td><td>SWMUs that have been removed from Table C of</td><td>Table P-1 should be revised by removing these sites and Table P-3</td></tr>
</table>

<table>
<tr><th>Comment Number</th><th>Section of Permit</th><th>Comment</th><th>Suggested Text Change</th></tr>
<tr><td></td><td>Table P-1 and P-3</td><td>Module VIII through a Class III permit modification prior to the effective date of the Consent Order are approved for NFA and require no controls and should be listed in Table P-3.

Table P-1 contains sites that are listed in Table C.1 of Module VIII. These sites have been removed from Table C by NMED through a Class III permit modification. These sites should not be listed in Table P-1, but should be listed in Table P-3, Corrective Action Complete Without Controls. These sites are identified in the suggested change column.</td><td>should be revised by adding these sites.
<table>
<tr><td>SWMU 03-032</td><td>Listed in Module VIII Table C.1, Class III permit modification effective 05-02-01 (already listed in Table P-3)</td></tr>
<tr><td>SWMU 03-045(i)</td><td>Listed in Module VIII Table C.1, Class III permit modification effective 05-02-01 (already listed in Table P-3)</td></tr>
</table>
A summary of the requested changes to Tables P-1, P-2, and P-3 is included with this document as Appendix L.</td></tr>
<tr><td>470</td><td>Attachment P, Table P-1</td><td>SWMUs that have not been removed from Tables A or C of Module VIII of the current LANL permit through a Class III permit modification should be included in Table P-1.

Table P-1 does not contain several sites that have not previously been approved for NFA or received a certificate of completion. These sites are identified in the suggested change column.</td><td>Table P-1 should be revised by adding these sites.
<table>
<tr><td>SWMU 03-029</td><td>Listed in Module VIII Table C (should be listed in Table P-1)</td></tr>
<tr><td>SWMU 16-032(c)</td><td>Listed in Module VIII Table C (should be listed in Table P-1)</td></tr>
<tr><td>SWMU 36-006</td><td>Listed in Module VIII Table A (should be listed in Table P-1)</td></tr>
</table>
A summary of the requested changes to Tables P-1, P-2, and P-3 is included with this document as Appendix L.</td></tr>
<tr><td>471</td><td>Attachment P, Table P-1</td><td>Several sites that were originally contained in the 1988 SWMU Report and listed in the original 1990 Module VIII were renumbered in the 1994 modification of Module VIII. The new numbers are the numbers used in the current version of Module VIII. The old numbers are no longer contained in Module VIII and should not be used in the Permit.

Table P-1 contains sites that have been renumbered and are duplicates of other sites already listed in Table P-1. These sites are identified below, along with the numbers of the duplicate sites.</td><td>Table P-1 should be revised by removing these sites.
<table>
<tr><td>SWMU 00-002</td><td>1990 SWMU Report (Vol. 1, pg. 11) shows that this site was being renumbered from 00-002 to 61-006. SWMU 61-006 is included in Table P-1.</td></tr>
<tr><td>SWMU 15-009(l)</td><td>The 1988 SWMU Report identified SWMU 15-009(k) as a septic tank having structure number 15-293. The 1990 SWMU Report (Vol. 1, pg. 36) noted that septic system 15-293 had never been constructed and proposed deleting SWMU 15-009(k). The 1990 SWMU Report (Vol. 1, pg. 27) also proposed adding two new septic system SWMUs in TA-15. These were designated as SWMU 15-009(k), which was associated with structure 15-67, and SWMU 15-009(l), which was associated with structure 15-00. Septic tank 15-67, however, was renumbered to structure 36-61 and was already designated as SWMU 36-</td></tr>
</table></td></tr>
</table>

Comment Number	Section of Permit	Comment	Suggested Text Change
			006(b). Because the newly added SWMU 15-009(k) was a duplicate of SWMU 36-006(b), it was deleted and SWMU 15-009(l) (associated with 15-00) was renumbered as SWMU 15-009(k), which is listed in Table P-1. SWMU 15-012(c): 1990 SWMU Report (Vol. 1, pg. 15) shows that this site was being renumbered from 15-012(c) to 15-014(m). SWMU 15-014(m) is included in Table P-3 and Module VIII Table A.1. SWMU 15-012(d): 1990 SWMU Report (Vol. 1, pg. 15) shows that this site was being renumbered from 15-012(d) to 15-014(k). SWMU 15-014(k) is included in Table P-1 and Module VIII Table A. SWMU 15-012(e): 1990 SWMU Report (Vol. 1, pg. 15) shows that this site was being renumbered from 15-012(e) to 15-014(l). SWMU 15-014(l) is included in Table P-1 and Module VIII Table A. SWMU 15-012(f): 1990 SWMU Report (Vol. 1, pg. 15) shows that this site was being renumbered from 15-012(f) to 15-014(i). SWMU 15-014(i) is included in Table P-1 and Module VIII Table A. SWMU 15-012(g): 1990 SWMU Report (Vol. 1, pg. 15) shows that this site was being renumbered from 15-012(g) to 15-014(j). SWMU 15-014(j) is included in Table P-1 and Module VIII Table A. AOC 36-009: 1993 RFI Work Plan for Operable Unit 1093, which includes former TA-27, indicates that the bazooka impact area identified as SWMU 27-003 is the same as the mortar impact area identified as SWMU 36-009. 1994 RFI Work Plan for Operable Unit 1130, which includes TA-36, indicates that SWMU 36-009 is being addressed in OU 1093 as SWMU 27-003. EPA's 1994 modification to Module VIII drops SWMU 36-009 because it is the same site as SWMU 27-003. SWMU 27-003 is listed in Table P-1. A summary of the requested changes to Tables P-1, P-2, and P-3 is included with this document as Appendix L.
472	Attachment P, Table P-1	Several SWMUs in Table P-1 were never identified by EPA as corrective action units or were deleted as	Table P-1 should be revised by removing these sites.

Comment Number	Section of Permit	Comment	Suggested Text Change
		corrective action units by EPA in the 1994 modification to Module VIII. SWMUs 16-002 and 16-014 were never listed in Module VIII and were not included in the RFI work plans for TA-16 submitted to EPA. SWMUs 21-016(d) and 21-016(e) were listed in May 1990 Module VIII but were not included in 1994 modification of Module VIII. Table P-1 contains SWMUs that were proposed for deletion in the 1990 SWMU Report and which were subsequently removed from Module VIII by EPA in the 1994 modification to Module VIII. These sites are identified in the suggested change column.	SWMU 16-002: SWMU 16-002 is identified in 1988 SWMU Report as a radioactive liquid waste tank at the TA-16 tritium facility. The 1990 SWMU Report (Vol. 1, pg. 36) proposes deleting this SWMU since it had not been used to manage waste and the TA-16 section of the report (Vol. 2) notes that this site has been deleted. SWMU 16-014: SWMU 16-014 is identified in 1988 SWMU Report as tritium-contaminated waste located inside the TA-16 tritium facility. The 1990 SWMU Report proposes deleting this SWMU since wastes had not been generated in this facility and the TA-16 section of the report (Vol. 2) notes that this site has been deleted. SWMU 21-016(d): SWMU 21-016(d) is identified in 1988 SWMU Report as a sump associated with MDA T (SWMU 21-016[a]). The 1990 SWMU Report (Vol. 1, pg. 36) proposes deleting this SWMU since it has been incorporated into SWMU 21-016(a) and the TA-21 section of the report (Vol. 2) does not list this site. The NMED-approved Investigation Work Plan for MDA T indicates that the sump comprising former SWMU 21-016(d) is part of SWMU 21-016(a). SWMU 21-016(a) is listed in Table P-1. SWMU 21-016(e): SWMU 21-016(e) is identified in 1988 SWMU Report as a sump associated with MDA T (SWMU 21-016[a]). The 1990 SWMU Report (Vol. 1, pg. 36) proposes deleting this SWMU since it has been incorporated into SWMU 21-016(a) and the TA-21 section of the report (Vol. 2) does not list this site. The NMED-approved Investigation Work Plan for MDA T indicates that the sump comprising former SWMU 21-016(e) is part of SWMU 21-016(a). SWMU 21-016(a) is listed in Table P-1. A summary of the requested changes to Tables P-1, P-2, and P-3 is included with this document as Appendix L.
473	Attachment P, Table P-1	Several sites listed in Table P-1 were identified in the 1990 SWMU Report but were subsequently renumbered or incorporated into other SWMUs. Although identified in the 1990 SWMU Report, these sites were not listed in Module VIII by EPA. The actual	Table P-1 should be revised by removing these sites. SWMU 35-010(misc): SWMU 35-010(misc) has been renumbered to AOC 35-010(e). The 1990 SWMU Report identifies five SWMUs, 35-010(a-d) and 35-010(misc), as being associated with the TA-35 sanitary lagoon and sand filter. SWMU 35-

Comment Number	Section of Permit	Comment	Suggested Text Change	
		or potential releases associated with these sites have been incorporated into other sites that are listed in Table P-1. Therefore, including these sites in Table P-1 would be duplicative and is not necessary. The revised SWMU descriptions and designations have been included in work plans or other documents approved by EPA or NMED. The original designations contained in the 1990 SWMU Report were not included by EPA in the 1994 modification to Module VIII and are not in the current version of Module VIII. These sites are identified in the suggested change column.		010(misc) is identified as being associated with Structure TA-35-215, which is the sand filter. In the 1992 RFI Work Plan for OU 1129, which includes TA-35, these five sites are identified as SWMUs 35-010(a-e). SWMU 35-101(e) is identified as the discharge headwall, which is part of structure TA-35-215, and is the same site as SWMU 35-010(misc). The 1994 modification to Module VIII contained SWMUs 35-010(a-d). The discharge from the sand filter (formerly SWMU 35-010[misc]) is currently identified as AOC 35-010(e) and is listed in Table P-1.
			SWMU 49-001(misc)	SWMU 49-001(misc) has been incorporated into SWMUs 49-001(a-g). The 1990 SWMU Report identifies SWMUs 49-001(a-g) and 49-001(misc) as comprising MDA AB. No descriptive information is provided concerning SWMU 49-001(misc). The 1992 RFI Work Plan for OU 1144, which includes TA-49, notes that SWMU 49-001(misc) is a nonspecific category mentioned in the 1990 SWMU Report that is addressed under SWMUs 49-001(a-g). SWMUs 49-001(a-g) are currently listed in Module VIII and are listed in Table P-1.
			SWMU 50-011(misc)	SWMU 50-011(misc) has been incorporated into SWMU 50-011(a). The 1990 SWMU Report identifies SWMUs 50-011(a-b) and 50-011(misc) as comprising septic systems at TA-50. No descriptive information is provided concerning SWMU 50-011(misc), but a referenced historical document indicates that it is the leach field for a decommissioned septic system. SWMU 50-011(a) is described as a septic tank, manhole, and distribution box. The 1992 RFI Work Plan for OU 1147, which includes TA-50, describes SWMU 50-011(a) as including the septic tank, manhole, distribution box, and leach field. Therefore, the leach field (50-011[misc]) has been incorporated into the septic system (50-011[a]). SWMU 50-011(a) is currently listed in Module VIII and Table P-1.
			SWMU 54-007(misc)	SWMU 54-007(misc) is identified in the 1990 SWMU Report as one of the SWMUs associated with septic systems in TA-54, along with SWMUs 54-007(a-e). SWMUs 54-007(a-e) were described as the septic systems associated with five septic tanks at TA-54. No descriptive information or structure number was provided for SWMU 54-007(misc). SWMUs 54-007(a-d) were listed by EPA in Module VIII. The investigations and voluntary corrective actions

Comment Number	Section of Permit	Comment	Suggested Text Change	
				conducted at these sites have considered releases from all components of these septic systems (i.e., tanks, drain lines, outfalls). Therefore, whatever component of the five septic systems was represented by SWMU 54-007(misc) has been incorporated into SWMUs 54-001(a-d) and AOC 54-007(e). SWMUs 54-007(a) and (d) are listed in Table P-1 and SWMUs 54-007(b) and (c) and AOC 54-0047(e) have been approved for NFA and are listed in Table P-3.
			SWMU 54-014(misc)	The 1990 SWMU Report does not specifically identify what component of the storage shafts at TA-54 is represented by SWMU 54-014(misc). The NMED-approved investigations conducted at MDAs G and L were comprehensive and designed to detect releases from all waste units at these MDAs. Whatever component of the TA-54 storage shafts was represented by SWMU 54-014(misc) has been addressed by the NMED-approved investigation of MDAs G and L. The other storage shaft SWMUs (54-014(a-d) are listed in Table P-1.
			SWMU 54-017(misc)	The 1990 SWMU Report does not specifically identify what component of MDA G is represented by SWMU 54-017(misc). The NMED-approved investigation conducted at MDA G was comprehensive and designed to detect releases from all waste units at MDA G. Whatever component of the disposal units at MDA G was represented by SWMU 54-017(misc) has been addressed by the investigation of SWMU 54-017. SWMU 54-017 is listed in Table P-1.
			SWMU 54-019(misc)	The 1990 SWMU Report does not specifically identify what component of MDA G is represented by SWMU 54-019(misc). The NMED-approved investigation conducted at MDA G was comprehensive and designed to detect releases from all waste units at MDA G. Whatever component of the disposal units at MDA G was represented by SWMU 54-019(misc) has been addressed by the investigation of SWMU 54-019. SWMU 54-019 is listed in Table P-1.
			SWMU 54-020(misc)	The 1990 SWMU Report does not specifically identify what component of MDA G is represented by SWMU 54-020(misc). The approved investigation conducted at MDA G was comprehensive and designed to detect releases from all waste units at MDA G. Whatever component of the disposal units at MDA G was represented by SWMU 54-020(misc) has been addressed by the investigation of SWMU 54-020. SWMU 54-020 is listed in Table P-1.

<table>
<tr><th>Comment Number</th><th>Section of Permit</th><th>Comment</th><th>Suggested Text Change</th></tr>
<tr><td></td><td></td><td></td><td>A summary of the requested changes to Tables P-1, P-2, and P-3 is included with this document as Appendix L.</td></tr>
<tr><td>474</td><td>Attachment P, Table P-1</td><td>Two sites listed in Table P-1 are contained in Table A or Table C of Module VIII, but have been split into multiple units as part of the 1999 and 2000 Annual Unit Audits (AUAs). The units into which the original sites were split are listed in Table P-1. Therefore, including the two original sites in Table P-1 would be duplicative and is not necessary. These sites are identified in the suggested change column.</td><td>Table P-1 should be revised by removing these sites.
<table>
<tr><td>SWMU 01-002</td><td>The 1990 SWMU Report lists SWMU 01-002 as an acid waste line and outfall. In the 2000 AUA, SWMU 01-002 was split into SWMU 01-002(a)-00, which is the waste line component, and SWMU 01-002(b)-00, which is the outfall component.</td></tr>
<tr><td>SWMU 16-017</td><td>The 1990 SWMU Report lists SWMU 16-017 as approximately 30 buildings used for HE operations during World War II. In the 1999 AUA, the individual buildings comprising SWMU 16-017 were identified and SWMU 16-017 was split into 24 units, each consisting of one of these buildings. These sites are designated as SWMU 16-017(a)-99 through SWMU 16-017(x)-99.</td></tr>
</table>
A summary of the requested changes to Tables P-1, P-2, and P-3 is included with this document as Appendix L.</td></tr>
<tr><td>475</td><td>Attachment P, Table P-1</td><td>SWMU 16-009(b) was incorporated into SWMU 16-019, which is listed in Table P-1. SWMU 16-009(b) was deleted from Module VIII when EPA modified Module VIII in 1994.</td><td>Table P-1 lists SWMU 16-009(b), but this site was incorporated into SWMU 16-019 and deleted as a separate site. Table A of the May 1990 version of Module VIII lists SWMUs 16-009(a) and 16-009(b). The 1990 SWMU Report proposes deleting SWMU 16-009(b) because it is a burn area that was part of Material Disposal Area R and addressed in SWMU 16-019. When EPA modified Module VIII in 1994, SWMU 16-009(b) was deleted from Table A. Table P-1 should be revised by removing SWMU 16-009(b).

A summary of the requested changes to Tables P-1, P-2, and P-3 is included with this document as Appendix L.</td></tr>
<tr><td>476</td><td>Attachment P, Table P-1</td><td>Table P-1 lists two SWMUs that are permitted units actively managing hazardous wastes and that are listed in Table O-1. Units should not be listed in both Table O-1 and Table P-1. These sites are identified in the suggested change column.</td><td>Table P-1 should be revised by removing these sites.
<table>
<tr><td>SWMU 16-010(c)</td><td>SWMU 16-010(c) is a flash pad used for open burning of waste explosives and is designated as structure 16-388. This unit is also listed in Table O-1 of the draft Permit.</td></tr>
<tr><td>SWMU 16-</td><td>SWMU 16-010(d) is a burn tray used for</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Comment Number</th><th>Section of Permit</th><th>Comment</th><th>Suggested Text Change</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><td>010(d)</td><td>open burning of waste explosives and is designated as structure 16-389. This unit is also listed in Table O-1 of the draft Permit.</td></tr>
</table>
A summary of the requested changes to Tables P-1, P-2, and P-3 is included with this document as Appendix L.
</td></tr>
<tr><td>477</td><td>Attachment P, Table P-1</td><td>Table P-1 lists AOCs and SWMUs that are closed units not in post-closure care and that are listed in Table O-3. Units should not be list in both Table O-3 and Table P-1. These sites are identified in the suggested change column. Please delete these from Table P-1</td><td>Table P-1 should be revised by removing these sites.
<table>
<tr><td>SWMU 16-008(b)</td><td>SWMU 16-008(b) is a former surface impoundment. This unit was closed under RCRA and is listed in Table O-3 as TA-16 Surface Impoundment.</td></tr>
<tr><td>SWMU 16-010(b)</td><td>SWMU 16-010(b) is a former flash pad used for open burning of waste explosives that is designated as structure 16-387. This unit was closed under RCRA and is listed in Table O-3 as TA-16-387.</td></tr>
<tr><td>SWMU 16-010(e)</td><td>SWMU 16-010(e) is a filter vessel formerly used for open burning of waste explosives that is designated as structure 16-401. This unit was closed under RCRA and is listed in Table O-3 as TA-16-401.</td></tr>
<tr><td>SWMU 16-010(f)</td><td>SWMU 16-010(f) is a filter vessel formerly used for open burning of waste explosives that is designated as structure 16-406. This unit was closed under RCRA and is listed in Table O-3 as TA-16-406.</td></tr>
<tr><td>SWMU 16-010(j)</td><td>SWMU 16-010(j) is a former filter bed. This unit was closed under RCRA and is listed in Table O-3 as TA-16-394.</td></tr>
<tr><td>SWMU 16-018</td><td>SWMU 16-018 is a former waste pile (MDA P). This unit was closed under RCRA and is listed in Table O-3 TA-16, Material Disposal Area P.</td></tr>
<tr><td>SWMU 40-003(a)</td><td>SWMU 40-003(a) is a former explosive scrap burn pile. This unit was closed under RCRA and is listed in Table O-3 as TA-40, Scrap Detonation Unit.</td></tr>
<tr><td>AOC 50-003(a)</td><td>AOC 50-003(a) is a former container storage area. This unit was closed under RCRA and is listed in Table O-3 as TA-50-1, Room 59.</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Comment Number</th><th>Section of Permit</th><th>Comment</th><th>Suggested Text Change</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><td>AOC 54-009</td><td>AOC 54-009 consists of former waste treatment tanks. This unit was closed under RCRA and is listed in Table O-3 as TA-54-L, Bldg. 35, Storage/Treatment Tanks (4).</td></tr>
</table>
A summary of the requested changes to Tables P-1, P-2, and P-3 is included with this document as Appendix L.
</td></tr>
<tr><td>478</td><td>Attachment P, Table P-3</td><td>Under Section III.A of the Consent Order, AOCs for which EPA has made a prior NFA determination and for which there are no corrective action requirements under the Consent Order are identified on a January 21, 2005 letter from EPA to NMED.

Table P-3 contains AOCs that were approved for NFA by EPA when EPA had corrective action authority. These sites are included in a letter from EPA to NMED dated January 21, 2005 and received by NMED on January 26, 2005 that identifies prior NFA approvals. Section III.A of the Consent Order indicates that these sites are not subject to corrective action requirements under the Consent Order. As drafted, it is unclear how NMED determined to include specific dates for “corrective action complete. Therefore, the date the EPA letter was received by NMED is suggested to be used as the date that corrective action was completed, rather than the dates specified in Table P-3. Some of these sites do not have this date as the corrective action completed date. In addition, one of the sites is identified as a SWMU, but is not listed in Module VIII. These sites are identified below, along with associated changes. Also, one of AOCs listed in the EPA letter, AOC 52-002(g), is not included in Table P-3 and should be added with a corrective action completed date of 1/26/2005.</td><td>Table P-3 should be revised by incorporating the changes indicated below.
<table>
<tr><td>AOC 00-010(a)</td><td>Change date corrective action completed from 2/23/2006 to 1/26/2005.</td></tr>
<tr><td>AOC 00-029(a)</td><td>Change date corrective action completed from 2/23/2006 to 1/26/2005.</td></tr>
<tr><td>AOC 00-029(b)</td><td>Change date corrective action completed from 2/23/2006 to 1/26/2005.</td></tr>
<tr><td>AOC 00-029(c)</td><td>Change date corrective action completed from 2/23/2006 to 1/26/2005.</td></tr>
<tr><td>AOC 35-004(n)</td><td>Change date corrective action completed from 5/2/2001 to 1/26/2005. Change “SWMU” to “AOC”.</td></tr>
<tr><td>AOC 35-004(o)</td><td>Change date corrective action completed from 5/2/2001 to 1/26/2005.</td></tr>
<tr><td>AOC 39-002(g)</td><td>Corrective action completed date is missing. Change corrective action completed date to 1/26/2005.</td></tr>
<tr><td>AOC 52-002(g)</td><td>Add to Table P-3 and include corrective action completed date of 1/26/2005.</td></tr>
</table>
A summary of the requested changes to Tables P-1, P-2, and P-3 is included with this document as Appendix L.</td></tr>
<tr><td>479</td><td>Attachment P, Table P-3</td><td>Some of the AOCs listed in Table P-3 do not have an entry for corrective action completed date. These AOCs were approved for NFA by NMED prior to the effective date of the Consent Order. The document approval date should be used as the corrective action</td><td>Table P-3 should be revised by incorporating the changes indicated below.
<table>
<tr><td>AOC 00-030(i)</td><td>Site was proposed for NFA in the VCA Completion Report for Consolidated Unit</td></tr>
</table></td></tr>
</table>

Comment Number	Section of Permit	Comment	Suggested Text Change
		completed date for AOCs. These sites are identified in the suggested change column, along with documents where NFA was approved.	00-003-99 and AOC 00-030(i). NMED approved the VCA Completion Report and concurred with NFA on January 30, 2002. Add corrective action completed date of 1/30/2002. AOCs C-06-003, C-06-006, C-06-007, C-06-008, C-06-009, C-06-010, C-06-011, C-06-012, C-06-013, C-06-014, C-06-015, C-06-016, C-06-017, C-06-018, C-06-020, and C-06-021 — These AOCs were proposed for NFA in the RFI Report for TA-6. NMED approved the RFI Report and concurred with NFA on March 14, 2000. Add corrective action completed date of 3/14/2000. AOCs 73-007, C-73-005(a), C-73-005(b), C-73-005(c), C-73-005(d), C-73-005(e), and C-73-005(f), — These AOCs were proposed for NFA in the RFI Report for Consolidated Unit 73-005-99. NMED approved the RFI Report and concurred with NFA on March 28, 2001. Add corrective action completed date of 3/28/2001 A summary of the requested changes to Tables P-1, P-2, and P-3 is included with this document as Appendix L.
480	Attachment P, Table P-3	SWMUs 35-006 and 35-011(a) were removed from Table A of Module VIII prior to the effective date of the Consent Order and should be identified as having corrective action complete without controls.	SWMUs 35-006 and 35-011(a) were removed from Table A of Module VIII by a Class III permit modification approved May 2, 2001. Table P-3 should be revised by adding SWMUs 35-006 and 35-011(a) with corrective action completed dates of 5/2/2001. A summary of the requested changes to Tables P-1, P-2, and P-3 is included with this document as Appendix L.
481	Attachment P, Table P-1 and P-3	AOC 52-003(a) has not been approved for NFA and should be listed in Table P-1 instead of Table P-3.	AOC 52-003(a) is listed in Table P-3 with a corrective action completed date of January 26, 2005. This site was not included in the January 21, 2005 letter from EPA to NMED and has not otherwise been approved for NFA. This site also is not listed in Table P-1. Table P-1 should be revised by adding AOC 52-003(a) and Table P-3 should be revised by deleting AOC 52-003(a). A summary of the requested changes to Tables P-1, P-2, and P-3 is

<table>
<tr><th>Comment Number</th><th>Section of Permit</th><th>Comment</th><th>Suggested Text Change</th></tr>
<tr><td></td><td></td><td></td><td>included with this document as Appendix L.</td></tr>
<tr><td>482</td><td>Attachment P, Table P-1</td><td>Table P-1 contains sites that are also listed in Table O-1. Table O-1 contains permitted units. New releases from permitted units are subject to corrective action under the Permit rather than under the Consent Order. Under the conditions of the draft Permit, these permitted units are subject to clean closure, which would address historical releases from these units. Because new and historical releases from these units will be addressed under the Permit, these units should not also be identified as corrective action units under the Consent Order. This would lead to potentially conflicting requirements, and is unnecessarily confusing.
These sites are identified in the suggested change column, along with the corresponding Table O-1 permitted unit.</td><td>Table P-1 should be revised by removing these units.
<table>
<tr><td>SWMU 54-001(a) (Structure 215)</td><td>Listed in Table O-1 as part of TA-54 Area L Container Storage Unit (above-ground).</td></tr>
<tr><td>AOC 54-001(b) (Structure 31)</td><td>Listed in Table O-1 as part of TA-54 Area L Container Storage Unit (above-ground).</td></tr>
<tr><td>AOC 54-001(d) (Structure 39)</td><td>Listed in Table O-1 as part of TA-54 Area L Container Storage Unit (above-ground).</td></tr>
<tr><td>AOC 54-001(e) (Structure 32)</td><td>Listed in Table O-1 as part of TA-54 Area L Container Storage Unit (above-ground).</td></tr>
<tr><td>AOC 54-002 (Structure 216)</td><td>Listed in Table O-1 as part of TA-54 Area L Container Storage Unit (above-ground).</td></tr>
<tr><td>AOC 54-015(a) (Shed 8)</td><td>Listed in Table O-1 as TA-54 Area G Storage Shed 8.</td></tr>
<tr><td>AOC 54-015(c) (Pad 1)</td><td>Listed in Table O-1 as part of TA-54 Area G Pad 1.</td></tr>
<tr><td>AOC 54-015(d) (Pad 2)</td><td>Now part of Pad 10, listed in Table O-1 as TA-54 Area G Pad 10.</td></tr>
<tr><td>AOC 54-015(e) (Pad 3)</td><td>Listed in Table O-1 as part of TA-54 Area G Pad 3.</td></tr>
<tr><td>AOC 54-015(f) (Pad 4)</td><td>Now part of Pad 10, listed in Table O-1 as TA-54 Area G Pad 10.</td></tr>
<tr><td>AOC 54-015(j) (Dome 49)</td><td>Listed in Table O-1 as part of TA-54 Area G Pad 5.</td></tr>
</table>
A summary of the requested changes to Tables P-1, P-2, and P-3 is included with this document as Appendix L.</td></tr>
<tr><td>483</td><td>Attachment P, Table P-1</td><td>There is a typographical error within Table P-1.</td><td>Table P-1, Page 7:
SWMU 03-104(z) should be changed to SWMU 03-014(z).</td></tr>
<tr><td>484</td><td>Attachment P, Tables P-1, P-2, and P-3</td><td>Many of the unit type descriptions contained in Tables P-1, P-2, and P-3 appear to be outdated. LANL has revised and updated these descriptions to reflect current site status and to provide better consistency of descriptions of similar sites.</td><td>Updated unit type descriptions for those units that do not match current LANL descriptions are included with this document as Appendix M.</td></tr>
</table>

Comments on the draft Hazardous Waste Facility Permit for Los Alamos National Laboratory

Comment Number	Section of Permit	Comment	Suggested Text Change
485	Attachment Q	There is a typographical error within Table Q-1.	Table Q-1, Page 2: The EPA ID for Envirocare, Clive, UT should be changed to "UTD982598898".

Appendix A

Updated Figure 1-1

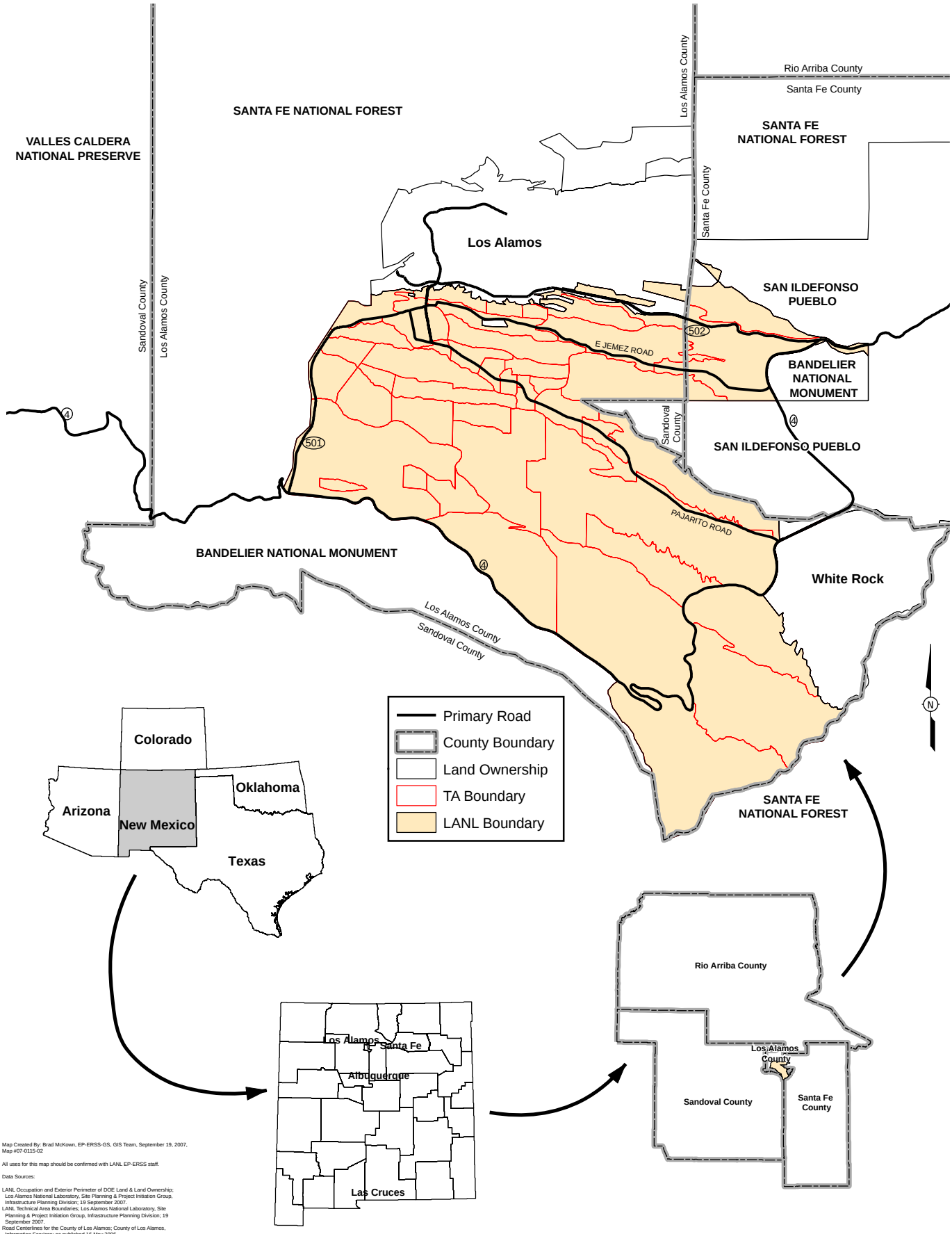

Figure 1-1

Regional Location Map of Los Alamos National Laboratory and Surrounding Land Use

Appendix B

Updated Figure 2-2

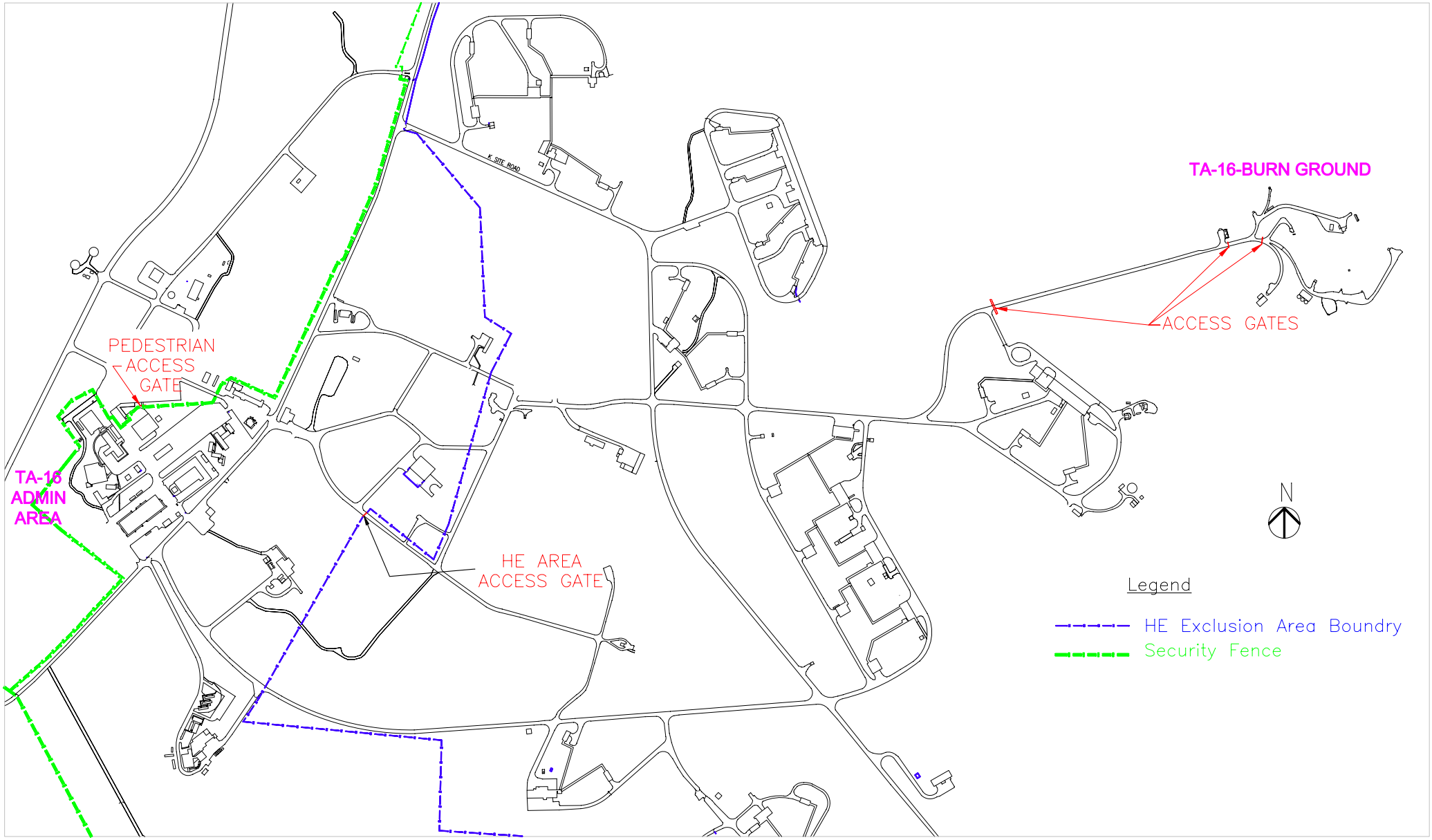

Figure 2-2
Location Map of Access Gates, HE Exclusion Area Boundary, and Security Fences in the Vicinity of Technical Area 16

Appendix C

Updated Figure 2-6

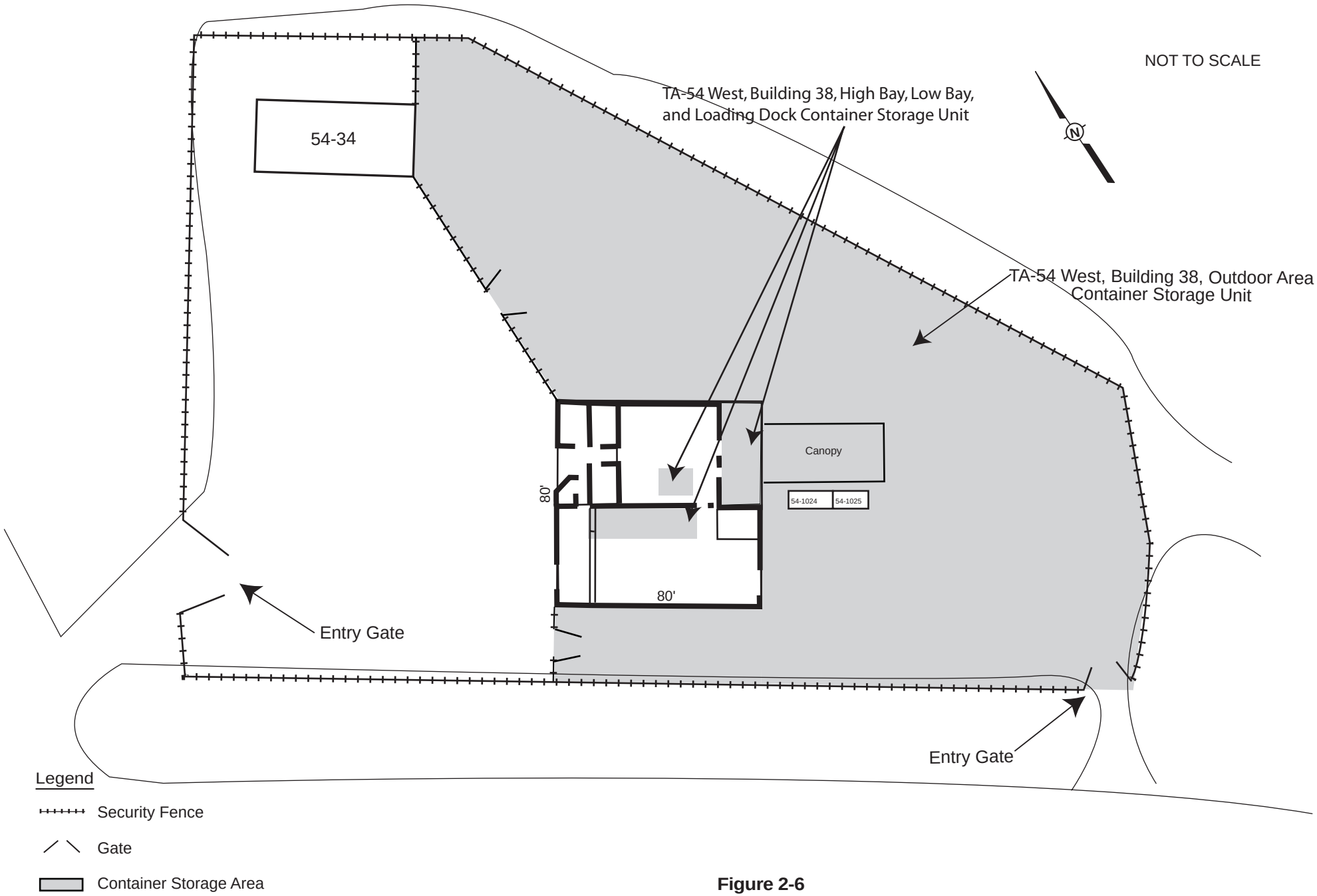

Figure 2-6

Container Storage Units at Technical Area (TA) 54 West, Building 38

Appendix D

Updated Figure 2-8

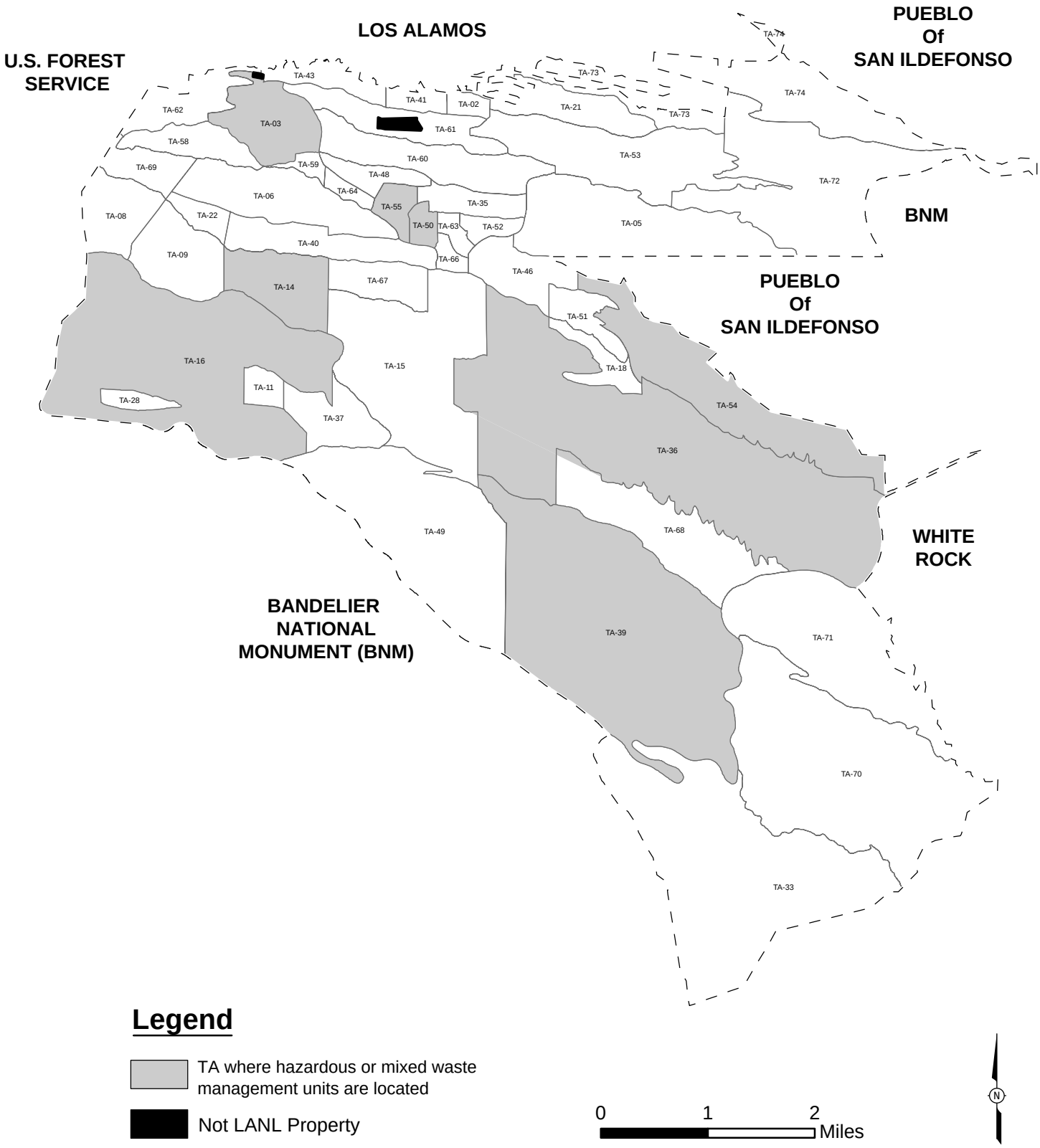

Figure 2-8

Location Map of Los Alamos National Laboratory (LANL) Technical Areas (TAs)

Created by ERSS GIS TEAM. Map Number 06-0108-02 September 19, 2007
State Plane Coordinate System New Mexico Central Zone North American Datum 1983 (ft)
All uses for this map should be confirmed with LANL EP-ERSS staff.
Boundary of Department of Energy Property In and Around the Los Alamos National Laboratory; Los Alamos National Laboratory, SSMO Site Planning & Project Initiation; infrastructure Planning Office. 19 September 2007
Technical Area Boundaries of Los Alamos National Laboratory; Los Alamos National Laboratory, SSMO Site Planning & Project Initiation; 19 September 2007

Appendix E

Updated Figure 14-1

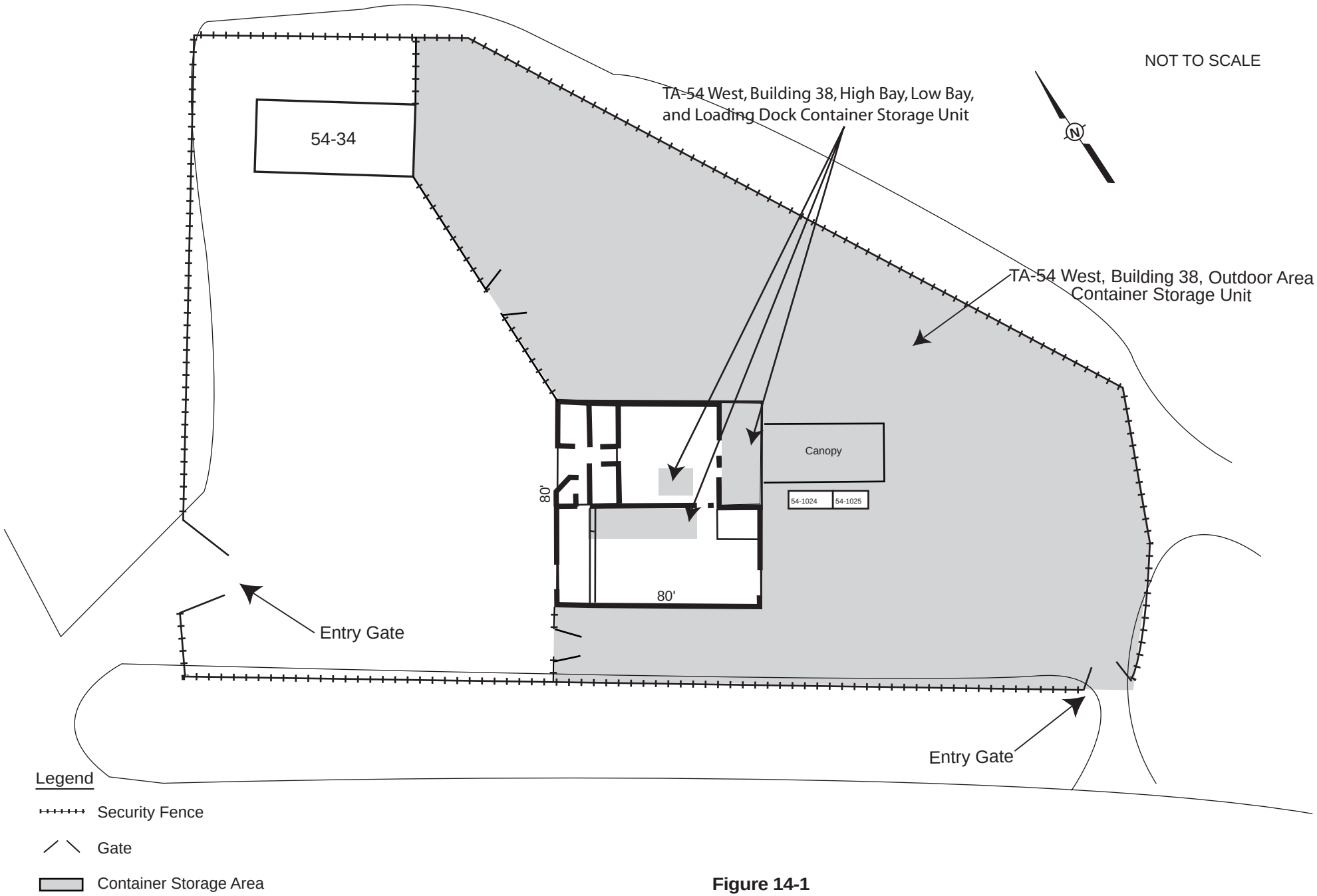

Figure 14-1

Container Storage Units at Technical Area (TA) 54 West, Building 38

Appendix F

Permit Attachment A- General and TA-Specific Facility Descriptions with Editing Marks

ATTACHMENT A

GENERAL AND TA-SPECIFIC FACILITY DESCRIPTIONS

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LIST OF ABBREVIATIONS/ACRONYMS

20.4.1 NMAC	New Mexico Administrative Code, Title 20, Chapter 4, Part 1
µg/L	microgram(s) per liter
AASHTO	American Association of State Highway and Transportation Officials
amsl	above mean sea level
cm/yr	centimeters per year
D&D	decontamination and decommissioning
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
ER	environmental restoration
ft	feet/foot
GPP	Groundwater Protection Program
HE	high explosives
IC	ion chromatography
LANL	Los Alamos National Laboratory
LC/MS/MS	liquid chromatography/mass spectrometry/mass spectrometry
mg/L	milligrams per liter
m/s	meters per second
m/yr	meter(s) per year
NMED	New Mexico Environment Department
pCi/L	picocuries per liter
ppb	parts per billion
R&D	research and development
RLWTF	Radioactive Liquid Waste Treatment Facility
RRES	Risk Reduction and Environmental Stewardship Division
TA	technical area

ATTACHMENT A
FACILITY DESCRIPTION

The information provided in this Attachment is submitted in accordance with the applicable requirements of the New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20.4.1 NMAC), revised June 14, 2000 [6-14-00]. The following subject areas are addressed in this attachment or are referenced to technical area (TA)-specific permit applications, permit modification requests, or permit renewal applications:

- A general description of the Los Alamos National Laboratory (LANL) facility [20.4.1 NMAC § 270.14(b)(1)];
- Traffic patterns, volume, and control [20.4.1 NMAC § 270.14(b)(10)];
- Facility location information for compliance with the seismic standard and floodplain requirements [20.4.1 NMAC §§ 270.14(b)(11) and 270.14(b)(19)(ii), and 20.4.1 NMAC § 264.18(a) and (b)];
- Topographic map requirements [20.4.1 NMAC § 270.14(b)(19)];
- Groundwater [20.4.1 NMAC § 270.14(c) and 20.4.1 NMAC § 264.90(a)].

A.1 GENERAL DESCRIPTION [20.4.1 NMAC § 270.14(B)(1)]

LANL is located in Los Alamos County, an incorporated county, in north-central New Mexico, approximately 60 miles north-northeast of Albuquerque and 25 miles northwest of Santa Fe. The regional location of LANL is shown on Figure 1-1. LANL is divided into TAs, as shown on Permit Part 2, Figure 2-8. LANL, which occupies an area of 40 square miles, and the associated residential and commercial areas of Los Alamos County, which occupy an area of approximately 109 square miles, are situated on the Pajarito Plateau. The plateau consists of a series of finger-like mesas separated by deep east-west trending canyons. Ephemeral, interrupted, or intermittent streams lie at the bottoms of all the canyons. The mesa tops range in elevation from approximately 7,800 feet (ft) above mean sea level (amsl) at the flank of the Jemez Mountains, located to the west of Los Alamos, to about 6,200 ft amsl at their eastern extent, where they terminate above the Rio Grande.

LANL's central mission is the reduction of global nuclear danger supported by research that also contributes to conventional defense, civilian, and industrial needs. This includes programs in nuclear, medium energy, and space physics; hydrodynamics; conventional explosives; chemistry; metallurgy; radiochemistry; space nuclear systems; controlled thermonuclear fusion; laser research; environmental technology; geothermal, solar, and fossil energy research;

nuclear safeguards; biomedicine; health and biotechnology; and industrial partnerships. LANL is owned by the U.S. Department of Energy (DOE) and is operated jointly by the DOE National Nuclear Security Administration and ~~the University of California~~Los Alamos National Security, LLC. The facility mailing address is P.O. Box 1663, Los Alamos, New Mexico, 87545.

LANL is an existing treatment ~~and recovery operations, general facility operations, D&D projects, and ER activities. Mixed~~ and storage facility. This General Part B Permit Renewal Application and other TA-specific permit applications, permit modification requests, or permit renewal applications are submitted for treatment and storage units that are current or proposed "active" operating units. LANL does not seek an operating permit for any disposal units.

Hazardous waste is generated at LANL primarily from research and development (R&D) activities, general facility operations, environmental restoration (ER) activities, and decontamination and decommissioning (D&D) projects. Mixed low-level waste is generated mainly from R&D activities, processing and recovery operations, general facility operations, D&D projects, and ER activities. Mixed transuranic waste is generated primarily from R&D activities, processing and recovery operations, and D&D projects. High explosives (HE)-contaminated waste is generated mainly from R&D activities, ER activities, wastewater treatment processes, and building maintenance and modification activities. Brief descriptions of specific hazardous and mixed waste management units at LANL are presented in Attachment A of TA-specific permit applications, permit modification requests, or permit renewal applications. Waste generated from R&D activities, processing and recovery operations, and ER activities may be received from off-site facilities, as described in Supplement 1 (LANL, 2003a).

A.2 TRAFFIC PATTERNS [20.4.1 NMAC § 270.14(B)(10)]

The traffic pattern information presented below is general in nature. More detailed information is addressed in TA-specific permit applications, permit modification requests, or permit renewal applications.

A.2.1 General

The rugged topography of alternating mesas and canyons present at LANL limits traffic circulation to only a few major arterial roads. Approximately 85 miles of paved roads are present within LANL (Pan Am World Services Inc., 1986). The major roads are shown on Map 1 in the most recent version of the "Los Alamos National Laboratory General Part A Permit

Application," hereinafter referred to as the LANL General Part A. There are approximately 19 miles of highway, 22 miles of TA access roads, and 44 miles of roads in LANL's TAs.

The main access route to LANL is State Road 502; the majority of traffic to LANL approaches from the east on State Road 502 and East Jemez Road. Alternate access routes are available from the south and west on State Roads 4 and 501 (West Jemez Road).

The pattern of east-west trending canyons at LANL prohibits north-south automobile travel in nearly all portions of LANL, with the exception of Diamond Drive and part of West Jemez Road. Los Alamos Canyon is spanned at Diamond Drive by an 820-ft-long steel-arch bridge that was completed in 1951 and improved in 1993. This bridge provides the main access between LANL facilities located on either side of Los Alamos Canyon.

Approximately 10,000 people are currently employed at LANL (including full-time, part-time, and casual LANL personnel and subcontractors). Roughly 4,000 people commute to LANL daily from communities outside Los Alamos County.

A.2.2 Waste Collection Areas

Hazardous and mixed waste is generated at TAs throughout LANL. Small quantities of waste are generally accumulated in containers at less-than-90-day storage areas or satellite accumulation areas and then packed in containers, such as drums, boxes, or crates, for transport to storage or treatment areas, as necessary. Bulk liquid waste is contained primarily in drums or tanks. Because hazardous and mixed waste may be generated throughout LANL, waste transport may occur on nearly all roads within LANL. Off-site wastes may be received at LANL on a limited basis.

A.2.3 Routes of Travel

Information addressing unit-specific travel routes is presented in Attachment A of TA-specific permit applications, permit modification requests, or permit renewal applications.

A.2.4 Traffic Volumes

According to a traffic study conducted in early 2003, the peak traffic periods are between 6:00 and 8:00 a.m. and 4:00 and 6:00 p.m. Monday through Thursday, and between 6:00 and 8:00 a.m. and 3:00 and 5:00 p.m. Friday (Digital Traffic Systems, 2003). The 2003 traffic study was conducted at 10 locations throughout Los Alamos County. The data collection locations are

shown on a figure in Supplement 2 (LANL, 2003a). A data summary and the data from the cited study are also presented in Supplement 2. Based on the study, the daily average number of vehicles is greatest on Monday through Friday near the intersection of Diamond Drive and Trinity Drive (Site 2 in the study), with 25,820 vehicles. The smallest daily average number of vehicles on Monday through Friday is 1,539 near the intersection of West Jemez Road and State Road 4.

Additional traffic volume information is provided in Attachment A of TA-specific permit applications, permit modification requests, or permit renewal applications.

A.2.5 Traffic Control Signals

Site-wide traffic flow at LANL is controlled by traffic lights, stop signs, and yield signs. Traffic lights are in place at all major intersections. Traffic signs are used at "T" intersections throughout LANL. Access to high security TAs is controlled by security guards or special access gates. Only personnel having appropriate security clearance and identification or escorted visitors are allowed access to the high security TAs. Vehicles and personnel entering these TAs are subject to periodic search by security personnel.

Unit-specific information addressing traffic control signals is presented in Attachment A of TA-specific permit applications, permit modification requests, or permit renewal applications.

A.2.6 Road Load-Bearing Capacity

Roads at LANL carrying the greatest traffic volumes include Diamond Drive, Pajarito Road, and East and West Jemez Roads. These roads are typically constructed with an 8-inch-thick base overlain with a 5-inch-thick asphaltic-concrete surface, and were designed and built in conformance with American Association of State Highway and Transportation Officials (AASHTO) specification HS-20 (AASHTO, 1996). This specification is intended to accommodate truck loading capacities of 32,000 pounds per axle. Roads within TAs are generally two-lane roads with asphaltic-concrete surfaces. These roads are typically constructed with a 6-inch-thick base overlain with a 3-inch-thick asphaltic-concrete surface. These roads were also designed and constructed to meet AASHTO specification HS-20.

A.3 LOCATION INFORMATION

A.3.1 Seismic Standard [20.4.1 NMAC § 270.14(b)(11)]

LANL is an “existing” facility that met the requirements for interim status under Section 74-4-9 of the New Mexico Hazardous Waste Act and Section 3005(e) of the Resource Conservation and Recovery Act. The U.S. Environmental Protection Agency (EPA) specifically exempted “existing” facilities operating under interim status from the requirement under 20.4.1 NMAC § 270.14(b)(11) to submit a Part B permit application that demonstrates compliance with the seismic standards under 20.4.1 NMAC § 264.18(a) [see *46 FR 2802* and *46 FR 2813* (January 12, 1981)].

A.3.2 Floodplain Standard [20.4.1 NMAC §§ 270.14(b)(11)(iii through v) and 270.14(b)(19)(ii); 20.4.1 NMAC § 264.18(b)]

As required in "Module VIII: Special Conditions Pursuant to the 1984 Hazardous and Solid Waste Amendments to RCRA for Los Alamos National Laboratory, EPA I.D. NM0890010515" (EPA, 1994), LANL mapped all 100-year floodplain boundaries within the LANL complex. A report was published documenting the floodplain mapping procedures (McLin, 1992). These maps were revised after the Cerro Grande Fire, and a new report was generated (McLin et al., 2001). The new maps and new report were provided to the New Mexico Environment Department (NMED) as Appendices B and C in the November 2001 Response to a Request for Supplemental Information (LANL, 2001). As shown on the new maps, no hazardous waste management units to be permitted are located within the 100-year floodplain at LANL. The new report is included as Supplement 3 (LANL, 2003a).

A.4 TOPOGRAPHIC MAPS [20.4.1 NMAC § 270.14(B)(19)]

Due to the size of LANL, several maps and figures are provided or referenced in LANL, 2003a to meet the requirements of 20.4.1 NMAC § 270.14(b)(19) [6-14-00]. All maps clearly show the map scale, the date of preparation, and a north arrow. The maps and figures used to fulfill these regulatory requirements include the following:

- LANL-wide 100-year floodplain maps were provided as Appendix C of the “Response to Request for Supplemental Information: Technical Adequacy Review, RCRA Permit Application: General Part A, April 1998, Revision 0.0; General Part B, October 1998, Revision 1.0; Los Alamos National Laboratory, EPA ID No. NM0890010515” (LANL, 2001).
- A map showing surface waters, including intermittent streams, and flow direction is included in the LANL General Part A.

- Surrounding land uses are shown in Permit Part 1, Figure 1-1~~requests, or permit renewal applications~~.
- Fire stations serving LANL and the County of Los Alamos are shown on Figure E-2 of Appendix E of the LANL General Part B Application (LANL, 2003a)~~. shown on Map 1 in the LANL General Part A~~.
- Wind roses for LANL are shown on Figures A-3 and A-4 of the LANL General Part B Application (LANL, 2003a).
- Access control features (e.g., fences, gates) are shown on the~~a~~ figure~~(s)~~ in Permit Part 2.
- Buildings and structures are shown on the figures in Permit Part 2~~on maps in the LANL General Part A and on figures in TA-specific permit applications, permit modification requests, or permit renewal applications~~.
- The locations of the hazardous and/or mixed waste management units at LANL are shown on maps in the LANL General Part A and ~~on figures in TA-specific permit applications, permit modification requests, or permit renewal applications~~o~~in Figure 2-8 of this Permit~~.
- A map showing National Pollutant Discharge Elimination System discharge structure locations is included in the LANL General Part A.
- Storm, sanitary, and process sewer systems at LANL are shown on Map A-1 of the LANL General Part B (LANL, 2003a).
- A map showing the boundaries of LANL is Figure 2-8 of this Permit~~provided as Map A-2 (LANL, 2003a)~~.
- Drainage control features (e.g., run-on/runoff) are shown on a figure(s) in TA-specific permit applications, permit modification requests, or permit renewal applications.
- An equipment cleanup area for LANL is located at TA-50-1. The location of TA-50-1 is shown on Figure 50-1 in the LANL General Part A.

Contour lines on all topographic maps are in intervals sufficient to detail natural drainage at LANL and in the vicinity of the waste management units. As provided in 20.4.1 NMAC § 270.14(b)(19) [6-14-00], LANL has submitted the maps at these scales and contour intervals due to the size of the waste management units, the extent of the LANL facility, and the topographic relief in the area.

A.5 GROUNDWATER [20.4.1 NMAC § 270.14(C) AND 20.4.1 NMAC § 264.90(A)]

The following information is provided to meet the requirements of 20.4.1 NMAC § 270.14(c) [6-14-00] for regulated units subject to corrective action. In the Los Alamos area, groundwater occurs in three modes: (1) water in shallow alluvium and underlying tuff in some of the larger canyons, (2) intermediate perched zone groundwater (a perched groundwater body above a less permeable layer and separated from the underlying aquifer by an unsaturated zone), and (3) the regional aquifer of the Los Alamos area.

A.5.1 Alluvial Groundwater Occurrence

Infiltration of surface water flow (caused by effluent discharges, spring discharge, or stormwater runoff) maintains shallow groundwater in the alluvium of some canyons. Alluvial groundwater is unconfined and is perched on underlying Bandelier Tuff, Cerros del Rio basalts, or Puye Formation. In wet canyon bottoms, infiltration of surface water maintains shallow groundwater in the alluvium. Wet canyons generally have large surface water flow, head in the Jemez Mountains, or receive effluent discharges. Groundwater levels are typically highest in the late spring due to snowmelt runoff and in mid-to-late summer due to thunderstorms. Groundwater levels and extent of saturation decrease during the winter and early summer when runoff is at a minimum. Dry canyons have little surface water flow. In these canyons, groundwater may occur seasonally in the alluvium. Dry canyons are generally those that head in the eastern portion of the Pajarito Plateau.

Alluvium that is as much as 100 ft thick has been deposited in the canyons of the Pajarito Plateau by intermittent and ephemeral stream flows. Alluvium in canyons that head in the Jemez Mountains is generally composed of sands, gravels, pebbles, cobbles, and boulders derived from the Tschicoma Formation and Bandelier Tuff on the flank of the mountains. Alluvium in canyons that head on the Pajarito Plateau is relatively fine-grained and consists of clays, silts, sands, and gravels derived from the Bandelier Tuff. In Mortandad Canyon east of Test Well 8, the alluvium has two distinct lithologic zones: the upper zone is a coarse-grained pebbly sand; the lower zone is a brown sandy silty clay, which rests uncomfortably on the Bandelier Tuff (Baltz et al., 1963, p. 31).

Ephemeral runoff in some canyons infiltrates the alluvium until downward movement is impeded by the less permeable underlying strata. The impeded downward movement results in a buildup of shallow alluvial groundwater. In some cases, relatively thin zones of shallow groundwater

can also be contained in the weathered tuff or some other geologic unit immediately underlying the alluvium. The horizontal and vertical extent of the alluvial groundwater is limited by depletion via evapotranspiration and movement into the underlying rocks (Purtymun et al., 1977). The limited saturated thickness and extent of the alluvial groundwater within the Laboratory boundaries make it inadequate as a significant source of potable and industrial water supply to LANL .

A.5.1.1 Alluvial Groundwater Flux

Lateral flow of the alluvial groundwaters is down canyon and in an easterly direction. Purtymun (1974) used observed travel times through the alluvial groundwater of Mortandad Canyon of a pulse of tritium released from TA-50 to infer the large-scale permeability of the alluvium. Based on this study, the velocity of alluvial groundwater flow ranges from about 60 ft per day in the upper reach to about 7 ft per day in the lower reach of the canyon (Purtymun, 1974). Purtymun (1974) determined field-scale hydraulic conductivity values to several zones of different texture within the alluvium, which were identified during a study by Baltz et al. (1963). Chloride and tritium tracer measurements were used to estimate the hydraulic conductivities. The upper zone has a hydraulic conductivity of 1.6×10^{-3} meters per second (m/s) between MCO-5 and MCO-6. The lower zone has a hydraulic conductivity of 5.8×10^{-4} m/s between MCO-6 and MCO-7.5, and 8.8×10^{-5} m/s between MCO-7.5 and MCO-8.

A.5.1.2 Alluvial Groundwater Quality

Water quality of the alluvial groundwater reflects the composition of storm runoff, snowmelt, and effluent discharges, where present. In canyons affected by effluents, the alluvial groundwater and sediments contain the majority of adsorbing contaminants (such as plutonium). Mobile solutes (such as tritium, HE compounds, and anions) migrate with moving groundwater, and are present in recharge. Contaminated alluvial groundwater occurs in Acid/Pueblo, DP/Los Alamos, and Mortandad canyons, and in Cañon de Valle, and potentially in other canyons where full investigations have not yet been conducted. In Acid/Pueblo, DP/Los Alamos, and Mortandad canyons, the contamination resulted from discharges from radioactive liquid waste treatment facilities (and untreated discharges in Acid/Pueblo Canyon). The groundwater and sediments are contaminated with residual radionuclides, including cesium-137, strontium-90, plutonium isotopes, and americium-241. In Mortandad Canyon, samples collected from alluvial shallow groundwater monitoring wells (Wells MCO-3 through MCO-6) in Mortandad Canyon in December 1999 contained perchlorate concentrations ranging from 80 to 220 parts per billion

(ppb). Other components of the discharges included fluoride and nitrate. Cañon de Valle contains residues from past discharges of HE wastewater.

A permeable reactive barrier was installed in Mortandad Canyon in 2002 to remove from alluvial aquifer water radionuclide and chemical contaminants resulting from legacy discharges to the canyon. Alluvial water that encounters the barrier is scrubbed of radionuclides (such as strontium-90, americium-241, and plutonium and uranium isotopes) as well as chemicals (such as perchlorate, nitrate, and heavy metals). To assess the effectiveness of the barrier, samples of water and materials inside the barrier's treatment box and water upstream and downstream of the barrier will be collected for analyses.

A.5.2 Intermediate Perched Groundwater Occurrence

The areas where intermediate perched zone groundwater has been encountered in wells are shown in Table A-1. Intermediate perched zones occur beneath major canyons, particularly in wet canyons that receive effluent discharges, have large surface water flow, or head in the Jemez Mountains. These intermediate perched zones occur in the Guaje Pumice Bed at the base of the Bandelier Tuff, the underlying Cerros del Rio basalts, and the Puye Formation. The location of intermediate perched zones is determined by presence of sufficient recharge, permeability variations of the rocks (reflecting lithologic variations), and geologic structure. Intermediate perched zones may be confined or unconfined. Intermediate perched zones beneath canyons do not generally extend laterally beneath the mesas.

Within drier mesas (generally in the eastern portion of the Laboratory), water can occur in the Bandelier Tuff under unsaturated conditions. Relatively little water (~1 millimeter/year) moves downward beneath the mesa tops under natural conditions due to low rainfall, high evaporation, and efficient water use by vegetation. Atmospheric evaporation extends within mesas, drying out the mesa interior and decreasing downward flow. Moisture content of the tuff varies with recharge rate and with texture of the lithologic units (Nylander et al., 2001). Generally, at depths of below 10 ft, the moisture content of the tuff varies from about 4 to 6% on the mesas. In the eastern portion of the Laboratory (e.g., in Los Alamos Canyon), perching layers are found within the interbedded Cerros del Rio Basalt and the Puye Formation sediments, where they underlie the more permeable Guaje Pumice Bed (Table A-1).

For wet mesas (generally along the western portion of the Laboratory), water occurs in the Bandelier Tuff primarily under unsaturated conditions. At the mesa top Well R-25 at TA-16, relatively low moisture contents in the Tshirege Member of the Bandelier Tuff range from 2% to 5%. The moisture content increases through the lower units of this member to about 21% in the top of the Cerro Toledo interval. Moisture content in the upper portion of the Otowi Member is about 7%, and increases at depth to approximately 20%. Groundwater also occurs as transient zones of saturation and in perennial saturated ribbons of limited spatial extent, which feed springs on the mesa sides. The saturated zones are localized by fractures and by permeability changes related to lithologic variations within the Bandelier Tuff. Higher rainfall and increased welding and jointing of the tuff lead to greater recharge rates for wet mesas than observed in drier mesas. In addition to spring discharge at mesa sides, saturated and unsaturated flow through mesas result in recharge to the underlying intermediate perched zones or the regional aquifer. In the western portion of the Laboratory, groundwater occurs as a thick (300-ft) intermediate perched zone within the lower Bandelier Tuff and the Puye Formation, approximately 700 ft below the mesa top.

Mesa top recharge under disturbed surface conditions is higher than under natural conditions. Increased recharge occurs when the soil is compacted, when vegetation is disturbed, or when more water is added to the hydrologic system by features such as pavement or effluent discharge. Fractures within mesas could provide preferential pathways for contaminants, especially in regions of high infiltration and in rocks of low matrix permeability. Fracture flow is less likely to occur when the rock matrix is porous and permeable, because water is drawn out of the fractures.

Characterization over the past decade has significantly improved the understanding of the hydrogeologic setting at LANL, including intermediate perched zone groundwater. The vertical and lateral extent of the perched zones, the nature and extent of the perching units, and the potential for migration of perched groundwater to the regional aquifer continue to be investigated. Drilling of alluvial wells and regional aquifer wells that intersect intermediate perched groundwater has provided sufficient information thus far that indicates that neither alluvial nor perched saturated water exist to any significant vertical extent. From the data and information generated thus far, LANL believes that upon completion of the Hydrogeologic Workplan, anticipated in calendar year 2004, sufficient information will have been generated through well installation and modeling to create a technically-based conceptual model of the

alluvial and perched water zones. Such information will help fulfill the objectives and purpose of site-wide characterization under the Hydrogeologic Workplan.

Upon completion of the Hydrogeologic Workplan, it is anticipated that additional hydrogeologic characterization will be performed as part of Investigation Work Plans for canyons and aggregate areas. Information obtained during these investigations will be used to continue improving the conceptual model of the alluvial and perched water zones.

A.5.2.1 Intermediate Perched Groundwater Flux

Lateral movement of intermediate perched groundwater may occur if the dip of the perching horizon and the canyon orientation do not coincide. Most recharge for west side perched intermediate groundwater originates as underflow of groundwater from the Jemez Mountains, with some contribution from recharge through mesas and canyon bottoms. Discharge from the intermediate perched zones occurs at springs or results in recharge to the underlying regional aquifer. Studies have shown that the intermediate perched zone groundwater in Pueblo Canyon is hydrologically connected to the stream in Pueblo Canyon (Abrahams and Purtymun, 1966). This perched zone water discharges at the base of the basalt at Basalt Spring, located on San Ildefonso Pueblo land east of LANL in lower Los Alamos Canyon. It has been estimated that the rate of movement of the perched groundwater in this vicinity is about 60 ft per day, or about 6 months from recharge to discharge (Purtymun, 1975).

The direction and flux of water through the unsaturated zone have been examined in two studies. Rogers and Gallaher (1995) tabulated Bandelier Tuff core hydraulic properties from several boreholes at LANL to estimate recharge rates beneath the Pajarito Plateau. Rogers et al. (1996) used hydraulic properties from seven boreholes that had sufficient data to evaluate movement of water in the vadose zone. The seven boreholes were from mesa top and canyon bottom locations, which represent two of the distinct hydrologic regimes on the Pajarito Plateau. Most head gradients determined for the boreholes were approximately unity, thus implying that flow is nearly steady state. One exception was found for boreholes at TA-54, Area G, where gradient reversals at depths of about 100 ft suggest that evaporative drying may be occurring.

Infiltration rates for liquid water at the seven locations were approximated by Rogers et al. (1996), who used vertical head gradients and unsaturated hydraulic conductivity estimates in their calculations. As such, the apparent fluxes beneath mesa top locations range from

approximately 0.06 centimeters per year (cm/yr) beneath Area G to 245 cm/yr directly beneath the TA-53 surface impoundments when they were operational. It is believed that high precipitation or surface disturbances (e.g., man-made ponds) lead to higher fluxes beneath some mesas. Beneath Cañada del Buey and Potrillo Canyon, two typically dry canyons, the apparent canyon-bottom infiltration rates range from 0.4 to 8.3 cm/yr. Beneath Mortandad Canyon, the canyon-bottom infiltration rates range from 1 to 10 cm/yr. More recent data from wet canyons have been interpreted to provide more comprehensive estimates. For Well R-15 in Mortandad Canyon, moisture profile measurements yield infiltration rate estimates on the order of 50 cm/yr. In Los Alamos Canyon, similar estimation techniques in canyon well LADP-3 were estimated to be consistent with infiltration rates of about 10 to 60 cm/yr. Such values are large enough that contaminants are predicted to travel through at least 100 meters of Bandelier Tuff during the time of Laboratory operations. This result is consistent with the observations of relatively deep penetration of contaminants such as perchlorate ion in R-15.

A.5.2.2 Intermediate Perched Groundwater Quality

Water quality within intermediate perched zones reflects that of the recharge water, including effluent discharges and native groundwater. Flow within intermediate perched zones could transport contaminants away from their surface source. Measurements of tritium in intermediate perched zone groundwater indicate that recharge to those depths has occurred during the last several decades. Observations made at four locations in Pueblo and Los Alamos canyons show that levels of tritium in the perched zone are high enough to be attributed to recharge of surface water contaminated by effluent or other releases from LANL operations. In a test well in Pueblo Canyon (TW-2A), tritium has been observed at concentrations between 2,000 and 3,000 picocuries per liter (pCi/L). Beginning in 1991, low-detection-limit tritium measurements have shown tritium levels of about 150 pCi/L in samples from a test well located in lower Pueblo Canyon near its confluence with Los Alamos Canyon (TW-1A), and in Basalt Spring, which is located in Los Alamos Canyon just downstream from its confluence with Pueblo Canyon. Measurements at these three locations are consistent with LANL's previous understanding that the intermediate perched zone groundwater in Pueblo Canyon has been affected by effluents discharged into the canyon. In the middle reach of Los Alamos Canyon, about one mile down gradient of TA-2, tritium was detected in the intermediate perched zone at well LADP-3 (Broxton and Eller, 1995). Perched groundwater was encountered at a depth of about 320 to 330 ft at this well, and water samples contained about 6,000 pCi/L of tritium.

In June 2001, characterization well MCOBT-4.4 was installed at the confluence of Mortandad and Ten Site canyons. Mortandad Canyon received effluent discharged from LANL's former wastewater treatment plant at TA-35 from 1951 to 1963 and from LANL's Radioactive Liquid Waste Treatment Facility (RLWTF) at TA-50 from 1963 to present. Tritium, fluoride, nitrate plus nitrate (as N), and perchlorate were detected in the perched groundwater samples collected from MCOBT-4.4. The nitrate and perchlorate concentrations exceeded the EPA primary standard for nitrate (10 milligrams per liter [mg/L]) and the draft provisional risk-based level for perchlorate (1 microgram per liter [µg/L]). Additional characterization sampling is being conducted at this well to evaluate contaminant concentrations in the perched zone (Broxton et al., 2002a). Results to date show that perchlorate concentrations range from 140 to 180 µg/L (ppb) at depths of 492 to 524 ft (Longmire, 2003).

A.5.3 Regional Aquifer Groundwater Occurrence

The regional aquifer of the Los Alamos area is the only aquifer known to be capable of providing the Los Alamos County community and Laboratory water supply (Purtymun, 1984). The surface of the regional aquifer rises westward from the Rio Grande within the Santa Fe Group into the lower part of the Puye Formation beneath the central and western parts of the Pajarito Plateau. The depth to the regional aquifer below the mesa tops (and adjacent canyons) ranges from about 600 ft at the eastern margin of the plateau (or near the surface at the Rio Grande) to about 1,200 ft along the western margin (or 900 ft below the deepest canyons). According to Purtymun (1984), the regional aquifer exhibits artesian conditions in the eastern part along the Rio Grande. Throughout the plateau, continuously recorded water level measurements collected in test wells since the Fall of 1992 indicate that the regional aquifer responds to barometric and earth tide effects in a manner typical of confined aquifers.

Twelve deep water-supply wells in three well fields currently produce water for LANL and the communities of Los Alamos and White Rock. The well fields include the off-site Guaje well field and the on-site Pajarito and Otowi well fields. The Guaje well field is located northeast of LANL and contains five production wells. The five production wells in the Pajarito well field are located in Sandia and Pajarito canyons and on mesa tops between these canyons. The Otowi well field is located in Los Alamos and Pueblo canyons, and consists of two production wells. Production of potable municipal water supplies from these three well fields from 1998 through 2001 ranged from approximately 1.32 billion gallons in 1999 to 1.51 billion gallons in 2000 (Koch and Rogers, 2003). Yields from individual production wells ranged from about 375 to 1,479 gallons per

minute from 1998 through 2001 (Koch and Rogers, 2003). The long-term trends in water levels reflect a plateau-wide decline in regional aquifer water levels in response to municipal water production. The average annual decline is gradual and has ranged from 0.7 to 2 ft per year for production wells (Koch and Rogers, 2003).

A.5.3.1 Regional Aquifer Groundwater Flux

The Rio Grande is the main discharge area for the regional aquifer. The largest component of recharge occurs as underflow of groundwater from the Sierra de los Valles, to the west of the Pajarito Plateau. Recharge also occurs by leakage from wet mesas, from alluvial groundwater in canyon bottoms on the Pajarito Plateau, and from intermediate perched groundwater. Local recharge on the Pajarito Plateau is important because it provides potential pathways for contaminants that originate from effluent discharges (Nylander et al., 2001).

Recharge due to infiltration and percolation of alluvial groundwater can be a source of recharge to underlying intermediate perched zones and to the regional aquifer, usually by unsaturated flow. Recharge from alluvial groundwater by unsaturated flow accounts for important volumes of recharge and relatively rapid rates of groundwater flow (reaching the regional aquifer in decades or less). In some cases, recharge might occur by saturated flow. Faults, fractures, joints, surge beds, and higher permeability geologic units that underlie saturated alluvium (such as the Guaje Pumice Bed, Cerro Toledo Interval, Cerros del Rio basalts, and Puye Formation) could provide pathways for downward movement of water and contaminants. Moisture content of the Bandelier Tuff below wet canyons is approximately 6% to saturation. In Mortandad Canyon, a wet canyon due to effluent discharges, the moisture content in the Otowi Member is about 20% at Well R-15. Moisture content in the underlying Cerros del Rio Basalt ranges from 0.5 to 14.6% (LANL, 2000a). Additional information on Los Alamos groundwater and vadose zone characteristics will be published in groundwater annual status reports, drill hole or characterization well completion reports, and other technical reports.

Isotope and age-dating measurements have been made in an effort to better understand the nature of recharge to the regional aquifer. Samples from test wells and water-supply wells that penetrate the regional aquifer were analyzed for carbon-14 and low-level tritium to allow tentative estimates of the age of the water in the regional aquifer at various locations. The interpretation of the carbon-14 data indicates that the minimum age of water in the regional aquifer varies. Under the western portion of the plateau, the minimum age is about 1,000 years.

As the water moves eastward, the age increases. Near the Rio Grande, the age of water is about 30,000 years (Rogers et al., 1996). It is important to recognize that, because the samples were collected from water drawn from screened intervals of 600 to 3,100 ft, these ages are composite water ages. Nonetheless, these ages are consistent with easterly flow, with younger water recharging at the plateau's western boundary and flowing towards the east.

Groundwater samples from the regional aquifer near Los Alamos appear to show the presence of some recent (within the last 40 years) recharge. Samples from five locations detected tritium in several measurements by extremely low-detection-limit analytical methods (Environmental Protection Group, 1995, 1994). These locations include TW-1 in Pueblo Canyon near the confluence with Los Alamos Canyon, TW-3 in Los Alamos Canyon, old observation and water-supply wells LA-1A and LA-2 in Los Alamos Canyon near its confluence with the Rio Grande, TW-8 in Mortandad Canyon, and in wells and springs at San Ildefonso Pueblo (Environmental Protection Group, 1995; Blake et al., 1995). The tritium levels measured range from less than a percent to less than a hundredth of a percent of current drinking water standards. In addition, these levels are less than the levels that could be detected by EPA-specified analytical methods normally used to determine compliance with drinking water regulations. Additionally, samples from water-supply well Otowi-1 collected during 2000 detected perchlorate (see Section A.5.3.2) that documents recent recharge to the regional aquifer.

The regional hydraulic gradient is generally to the east, with a slight southerly component in some areas. As shown in Table A-2, the gradient is fairly steep in the western portion of the plateau within the Puye Formation, less steep in the central portions, then steepening again to the east as the groundwater approaches the Rio Grande. Locally, gradients may depart from these larger scale estimates; uncertainty due to local variations at scales less than R-well spacing is probably larger than uncertainty due to measurement error. Permeability data (provided in Table A-3) show that considerable variation in permeability is present in the aquifer. Assuming average aquifer properties measured in wells in the central portion of the plateau, LANL estimates a typical groundwater velocity to be 33 meters per year [m/yr] (see Table A-4). This is in good agreement with previous estimates (Purtymun, 1995). Any such estimate has inherent uncertainties due to the difficulty in estimating the effective porosity of the medium. By choosing a value on the low end of the range typically assumed for sedimentary rocks, it is thought that the groundwater velocity estimate is a maximum bound.

A.5.3.2 Regional Aquifer Groundwater Quality

Continued testing of water-supply wells, test wells, and springs in 2001 confirm the overall quality of the regional aquifer (LANL, 2002). Trace levels of tritium are present in the regional aquifer in a few areas where past liquid waste discharges occurred, notably beneath Los Alamos, Pueblo, and Mortandad canyons. The highest tritium level found in a regional aquifer test well (Test Well-1), near water-supply well Otowi-1, was about 1/50 of the drinking water standard of 20,000 pCi/L (LANL, 2002). Tritium continued to be found in water-supply well Otowi-1, located in Pueblo Canyon, in 2001 at a level that is 1/500 the drinking water standard. Except for above-background tritium in water-supply well Otowi-1, no other radionuclides other than naturally-occurring uranium were found in Los Alamos County, San Ildefonso Pueblo, or Santa Fe water-supply wells (LANL, 2002). Nitrate concentration in Test Well-1 remained elevated; however, in 2001, the concentration was only about half the drinking water standard of 10 mg/L, and nitrate was higher than background in water-supply well Otowi 1 (LANL, 2002).

The EPA named perchlorate as a contaminant of concern after studies linked the chemical to thyroid disorders and other potential health problems. Perchlorate is a non-radioactive chemical compound used in a variety of industrial processes. At LANL, perchlorate is a byproduct of the perchloric acid used in nuclear chemistry research. Low-level concentrations (2 to 3 ppb) of perchlorate were detected in late June 2000 in water samples collected from the Otowi-1 water-supply well located in lower Pueblo Canyon (LANL, 2000b). Independent analytical laboratories corroborated LANL's analytical results, and in four separate samples collected between June 21, 2000, and July 6, 2000, perchlorate concentrations in the Otowi-1 well ranged from 2 to 3.5 ppb. In 2001, perchlorate was detected in samples collected from the Otowi-1 well at concentrations of 1.7 and 5.85 µg/L (ppb); these concentrations were dependant on analytical method (LANL, 2002). Ion chromatography (IC) and liquid chromatography/mass spectrometry/mass spectrometry (LC/MS/MS) were used to analyze samples collected from Otowi-1. These two methods have different detection limits; the LC/MS/MS method has a lower detection limit than the IC method.

EPA has not yet established a drinking water standard for perchlorate, but has recommended safe drinking water levels ranging from 4 to 18 ppb. The State of California, in response to EPA studies, lowered its perchlorate standard from 18 to 4 ppb. An action level or regulatory standards have not been established by the State of New Mexico. In 1998, the EPA added perchlorate to the Safe Drinking Water Act's Contaminant Candidate List for consideration for

possible regulation; however, a finalized toxicity assessment and technical guidance development must be completed before a federal drinking water regulation for perchlorate would be promulgated.

LANL began testing for perchlorate in December 1997 after the California Department of Health Services identified perchlorate as a contaminant of concern. A possible source for the contamination could be legacy waste that was discharged into Acid Canyon from LANL's TA-45 treatment plant, which operated from 1943 to 1964. The plant was decommissioned in 1966 and 1967. Prior to the June 2000 detection, perchlorate had not been detected in any water-supply wells. Since 1997, LANL has submitted samples to external laboratories that utilize the most current industry-recognized minimum detection limits for perchlorate. Since 1999, LANL has sampled and analyzed (internally) four drinking water wells and several shallow and intermediate groundwater monitoring wells using the minimum detection limit of 4 ppb. Historical industry detection limits prior to 1997 were 100 ppb.

LANL personnel have successfully demonstrated the effectiveness of a new ion-exchange system installed in March 2002 at the TA-50 RLWTF, which discharges treated effluent to Mortandad Canyon. Since the installation of this special ion-exchange resin system, perchlorate concentrations in the discharged effluent have been reduced to below the EPA's approved testing method detection limit of 4 ppb. Between January 2000 and April 2001, before the new ion-exchange system was installed, monthly composite samples of effluent discharged from the RLWTF showed concentrations that ranged between 3 and 950 ppb. The modifications to the treatment operations have significantly decreased perchlorate concentrations in water discharged from the treatment facility.

Regulated units (i.e., surface impoundments, waste piles, land treatment units, and landfills, as provided by 20.4.1 NMAC § 264.90(a)(2) [6-14-00]) will meet the requirements specified in 20.4.1 NMAC §§ 260.90-100 [6-14-00], as appropriate. Currently, the regulated units at LANL include the Area G landfills (Pit 29 and Shaft 124), the Area H landfill (Shaft 9), and the Area L landfill (Shafts 1, 13-17, and 19-34 and Impoundments B and D). Areas G, H, and L are located at TA-54. Interim status groundwater monitoring data for the regulated units at LANL were not obtained as part of a groundwater monitoring program, as required by 20.4.1 NMAC §270.14(c)(1), because LANL had submitted groundwater monitoring waiver demonstrations, in accordance with 20.4.1 NMAC § 265.90(c). These waiver requests were subsequently denied,

and NMED requested that LANL develop the Hydrogeologic Workplan, which would address the requirements of 20.4.1 NMAC §§ 264.91 through 264.100 for regulated units and 20.4.1 NMAC § 264.101 for solid waste management units that have been determined to have had a release. The Hydrogeologic Workplan is being used to characterize the site-wide hydrogeologic setting at the facility. The data collected will help in the identification of the regional aquifer and any hydraulically-interconnected aquifers beneath the facility property, including groundwater flow direction and rate, and the basis for such identification, as required by 20.4.1 NMAC § 270.14(c)(2). It will also be used to establish a technical basis for siting potential future monitoring wells. The groundwater wells constructed pursuant to the Hydrogeologic Workplan may be used to monitor groundwater, and, if necessary, the well characterization and groundwater monitoring data collected will be used as inputs to determine points of compliance, as required by 20.4.1 NMAC § 264.95, as well as potential future locations of groundwater monitoring wells.

As required in 20.4.1 NMAC § 270.14(c)(3), topographic maps of the hazardous waste management areas at TA-54 are included in the LANL General Part A and in the "Los Alamos National Laboratory Technical Area 54 Permit Renewal Application," Revision 3.0 (LANL, 2003). These maps also show the property boundary (if allowed by map scale) and the locations of R wells installed at the time the maps were generated. The "point of compliance," as defined under 20.4.1 NMAC § 264.95, and the groundwater flow direction and rate will be added to these maps in General Part A revisions, as appropriate, when this information is developed and refined, respectively. There is currently no known groundwater contamination from the regulated units at TA-54; therefore, a description of any plume of contamination that has entered the groundwater, as required by 20.4.1 NMAC § 270.14(c)(4), is not provided herein. LANL is currently developing a facility-wide groundwater monitoring plan which will, among other topics, discuss relevant and appropriate groundwater monitoring provisions for LANL's regulated units and solid waste management units, as required by 20.4.1 NMAC § 270.14(c)(5) through (8).

A.5.4 Groundwater Characterization

To date, numerous characterization wells have been drilled, as required by the Hydrogeologic Workplan (LANL, 1998). The installed wells include Wells R-5, R-7, R-8, R-9, and R-9i (Los Alamos/Pueblo Canyon), R-12 (Sandia Canyon), R-13 and R-15 (Mortandad Canyon), R- 14 (Ten Site Canyon), R-16 (Overlook Park in White Rock), R-19 (mesa top above Threemile and

Potrillo canyons), R-21 and R-22 (on Mesita del Buey between Pajarito Canyon and Cañada del Buey), R-20, R-23, and R-32 (Pajarito Canyon), R-25 (south rim of Cañon de Valle), and R-31 (Ancho Canyon). The following provides brief descriptions of each of the characterization wells. Additional information will continue to be provided to the NMED Hazardous Waste Bureau via well summary reports, well completion reports, monitoring reports, and other technical reports.

- Well R-5 is located in lower Pueblo Canyon between the Los Alamos County Sewage Treatment Plant and water-supply well Otowi-1. Drilling activities started in April 2001, and well installation was completed in May 2001. The total depth of Well R-5 is 902 ft. The regional aquifer was reached at a depth of 685 ft. The well was completed with four screened intervals at depths of 326-331 ft, 373-389 ft, 677-720 ft, and 859-864 ft. Based on the analytical results from screening samples collected from the borehole during drilling, it appears that contamination from Laboratory discharges is not present in the regional aquifer at this well site. Additional information for Well R-5 is presented in the "Characterization Well R-5 Completion Report" (Risk Reduction and Environmental Stewardship Division [RRES] Groundwater Protection Program [GPP], 2003a).

- Well R-7 is located in upper Los Alamos Canyon. Drilling activities began in February 2000, and well construction and development were completed in February 2001. The well was drilled to a total depth of 1,097 ft. The regional aquifer was reached at a depth of 903 ft. The R-7 well was completed with three screened intervals: two associated with perched saturation at depths of 363-379 ft and 730-746 ft; and one straddling the regional water table at 895-937 ft. No contaminants above background were detected in samples collected from the borehole during drilling. Additional information for Well R-7 is published in the "Characterization Well R-7 Completion Report" (Stone et al., 2002).

- Well R-8 is located in Los Alamos Canyon, downstream of the confluence with DP Canyon. Drilling activities began in September 2001, and well construction and development were completed in February 2002. The R-8 well was drilled to a total depth of 1,022 ft. The regional aquifer was reached at a depth of 709 ft. The well was completed with two screened intervals at depths of 705-756 ft and 821-828 ft. Based on the analytical results from screening samples collected from the borehole during drilling, tritium is present at a slightly elevated level above background. Additional information

for Well R-8 is presented in the “Characterization Well R-8 Completion Report” (RRES GPP, 2003b).

- Well R-9 is located in Los Alamos Canyon at the eastern boundary of LANL. During the drilling of the well to a total depth of 771 ft, five perched water zones were encountered. The regional aquifer was reached at a depth of 688 ft. Tritium levels were highest (347 pCi/L) in the uppermost perched zone and lowest (14 pCi/L) in the regional aquifer. These levels are far below the levels of health concern (20,000 pCi/L), but do indicate the movement of some water from the land surface to the groundwater zones within the past 40 or so years. Additional information for Well R-9 is published in the "Characterization Well R-9 Completion Report" (Broxton et al., 2001a).

- Well R-9i was completed in March 2000 near the eastern LANL boundary in Los Alamos Canyon to a depth of 322 ft with two screened intervals in the upper saturated zones identified in Well R-9. Additional information for Well R-9i is published in the "Characterization Well R-9i Completion Report" (Broxton et al., 2001b).

- Well R-12 is located in Sandia Canyon at the eastern boundary of LANL. This well was drilled to a total depth of 886 ft. An intermediate-depth perched groundwater zone was encountered at a depth of 424 ft, and the regional aquifer was reached at a depth of 805 ft. The perched groundwater at the 424-ft depth was found to contain nitrate, ammonia, chloride, and tritium (208.1 pCi/L). The presence of some recent recharge water is indicated at this regional aquifer location by tritium levels of 46.9 pCi/L; nitrogen isotopes present indicate a sewage influence. Additional information for Well R-12 is published in the "Characterization Well R-12 Completion Report" (Broxton et al., 2001c).

- Well R-13 is located in Mortandad Canyon. Drilling activities began in August 2001, and well construction, development, and site completion were finished in February 2002. The borehole was drilled to a total depth of 1,133 ft, and the well was installed to a total depth of 1,029.4 ft. No perched water was encountered; the regional aquifer was reached at a depth of 834 ft. The well was completed with one screened interval in the regional aquifer at a depth of 958-1,019 ft. Based on the analytical results from water samples collected from the borehole during drilling, it appears that contamination from Laboratory discharges is not present in the regional aquifer at this well site. Additional

information is presented in the “Characterization Well R-13 Completion Report” (RRES GPP, 2003c).

- Well R-14 is located in Ten Site Canyon, east of the former radioactive liquid waste treatment and septic facilities at TA-35. Preparation and drilling activities began in May 2002, and well construction, development, and site completion were finished in February 2003. The well was drilled to a total depth of 1,327 ft. No perched water zones were encountered; the regional aquifer was reached at a depth of 1,182 ft. The well was completed with two screened intervals in the regional aquifer at depths of 1,201-1,233 ft and 1,286-1,293 ft. Two water samples were collected from the screened intervals in the regional aquifer during well development activities. Based on the analytical results for these samples, it appears that contamination from Laboratory discharges is not present in the regional aquifer at this well site. Additional information is presented in the “Characterization Well R-14 Completion Report” (RRES GPP, 2003d).

- Well R-15 is located in Mortandad Canyon about 1.5 miles east of the RLWTF at TA-50. Both hollow stem auger and air rotary/casing advance methods were used in drilling this well. A definable intermediate perched zone was encountered at a depth of 646 ft, and the regional aquifer was reached at a depth of 964 ft. The total depth of Well R-15 is 1,107 ft. The deep perched zone contained tritium at concentrations of 3,770 ± 850 pCi/L; these levels indicate infiltration of Laboratory-derived contaminants at this location, but the levels are well below federal drinking water standards. The tritium concentration in the regional aquifer at Well R-15 is less than detection. A perchlorate concentration of 12 ppb was detected in the perched water zone at Well R-15 in December 1999 (LANL, 2000c). Additional information for Well R-15 is published in the "Characterization Well R-15 Completion Report" (Longmire et al., 2001a).

- Well R-16 is located just south of Cañada del Buey near Overlook Park in White Rock, and immediately upstream from the sanitary sewage treatment plant. Preparation and drilling activities began in July 2002, and well construction and development were completed in December 2002. The well was drilled to a total depth of 1,287 ft, and the zone of regional groundwater saturation was encountered at a depth of 642 ft. The well was completed with four screened intervals at depths of 641-649 ft, 863-871 ft, 1,015-1,022 ft, and 1,237-1,245 ft. Three water samples were collected after well

development, one each from the lower three screened intervals. Based on analytical results for these three samples, contamination from Laboratory discharges does not appear to be present in the regional aquifer at this well site. Additional information is presented in the “Characterization Well R-16 Completion Report (RRES GPP, 2003e).

- Well R-19 was completed near TA-36 on the mesa above Threemile and Potrillo canyons to a depth of 1,902 ft with seven screens: two in the perched zone; and five in the regional aquifer. Additional information for Well R-19 is published in the "Characterization Well R-19 Completion Report" (Broxton et al., 2001d).

- Well R-20 is located in Pajarito Canyon, just east of TA-18 on the south side of Pajarito Road. Preparation and drilling activities began in July 2002, and well construction, development, and site completion activities were finished in March 2003. The borehole was drilled to a total depth of 1,365 ft. No perched zones were encountered during drilling, and the regional aquifer was reached at a depth of 873 ft. The well was completed with three screened intervals in the regional aquifer at depths of 905-912 ft, 1,147-1,155 ft, and 1,329-1,336 ft. Two regional aquifer water samples were collected from the developed well. Although strontium-90 was detected near the minimum detection activity level, the absence of tritium suggests that the waters have not been impacted by Laboratory releases. Additional information is presented in the “Characterization Well R-20 Completion Report” (RRES GPP, 2003f).

- Well R-21 is located in Cañada del Buey north of TA-54. This well was installed between October 2002 and February 2003. It was advanced to a depth of 995 ft. No perched water zones were encountered during borehole advancement, and the static water level of the regional aquifer was determined to be at a depth of approximately 804 ft. Based on the analytical results for screening samples collected from the single well screen, which extends from 889 ft to 907 ft below ground surface, potential contaminants of concern were not detected. Additional information for this well is published in the “Characterization Well R-21 Completion Report” (Kleinfelder, Inc., 2003).

- Well R-22 was drilled on Mesita del Buey east of TA-54, Area G, to a depth of 1,489 ft. Drilling activities began in August 2000, and well construction and development were completed in November 2000. The regional aquifer was reached at a depth of 883 ft; no

perched intermediate groundwater was encountered in Well R-22. The well was completed with five screened intervals in the regional zone of saturation at depths of 872-914 ft, 947-989 ft, 1,272-1,279 ft, 1,378-1,385 ft, and 1,447-1,452 ft. Samples collected from the borehole during drilling contained tritium at concentrations above background. Additional information for Well R-22 is published in the "Characterization Well R-22 Completion Report" (Ball et al., 2002).

- Well R-23 is located in Pajarito Canyon, just west of the intersection of State Road 4 and Pajarito Road and on the south side of Pajarito Road. Preparation and drilling activities began in July 2002, and well construction, development, and site completion activities were finished in March 2003. The borehole was drilled to a total depth of 935 ft. A possible perched zone was encountered at a depth of 470 ft, and the regional aquifer was reached at a depth of 829 ft. The well was completed with one screened interval in the regional aquifer at a depth of 816-873 ft. Based on the analytical screening results of the regional groundwater samples collected, contamination from Laboratory discharges does not appear to be present in the regional aquifer at this well site. Additional information is presented in the “Characterization Well R-23 Completion Report” (RRES GPP, 2003g).

- Well R-25 is located on a mesa top at TA-16 along the south rim of Cañon de Valle near the western boundary of LANL. The total depth of Well R-25 is 1,942 ft, and the regional aquifer was reached at a depth of 1,286 ft. Well R-25 was completed with nine screened intervals: three in the upper zone of saturation; one in the intervening alternating wet/dry zone; and five in the regional zone of saturation. Contaminants detected in borehole samples included HE compounds and their associated degradation products. Subsequently, quarterly sampling has detected solvent compounds. Additional information for Well R-25 is published in the "Characterization Well R-25 Completion Report" (Broxton et al., 2002b).

- Well R-31 is located at TA-39 in the north fork of Ancho Canyon near the southern boundary of LANL. This well was drilled to a total depth of 1,103 ft. The regional zone of saturation was encountered between 521 and 537 ft; no intermediate perched zones were encountered in this well. Additional information for Well R-31 is published in the "Characterization Well R-31 Completion Report" (Vaniman et al., 2002).

- Well R-32 is located in Pajarito Canyon, within TA-36 and south of TA-54, on the north side of Pajarito Road. Preparation and drilling activities began in July 2002, and well construction, development, and site completion activities were finished in March 2003. This well was drilled to a total depth of 1,008 ft. Perched groundwater was encountered in the alluvium at a depth of 22 ft. No other perched zones were identified. The regional aquifer was reached at a composite depth of 783 ft. The well was completed with three screened intervals in the regional aquifer at depths of 867-875 ft, 932-935 ft, and 973-981 ft. Based on analytical results for water samples collected at each screened interval, contamination from Laboratory discharges does not appear to be present in the regional aquifer at this well site. Additional information is presented in the “Characterization Well R-32 Completion Report” (RRES GPP, 2003h).

The following provides brief descriptions of wells that were installed for further investigation of contaminants in groundwater:

- CdV-R-15-3 was completed at TA-15 on the mesa above Cañon de Valle in June 2000 with six screened intervals: three in the upper perched zone and three in the regional zone of saturation. The three perched zone screens are dry. Additional information for Well CdV-R-15-3 is published in the "Well CdV-R-15-3 Completion Report" (Kopp et al., 2002).

- MCOBT-4.4 in Mortandad Canyon was drilled to a total depth of 767 ft in June 2001. The borehole was plugged up to a depth of 725 ft and a single completion well was installed.

- MCOBT-8.5 in Mortandad Canyon was drilled to a total depth of 740 ft in June 2001. The borehole was plugged up to a depth of 670 ft in order to install a well in Cerros del Rio basalt. However, after several days of monitoring, the borehole did not yield water and MCOBT-8.5 was plugged back to the surface.

A.6 OTHER PERMIT ACTIVITIES

Other types of Resource Conservation and Recovery Act permits will be addressed in TA-specific permit applications, permit modification requests, or permit renewal applications.

A.7 REFERENCES

AASHTO, 1996, “Standard Specifications for Highway Bridges,” 16th Edition, American Association of State Highway and Transportation Officials.

Abrahams, J.H. and W.D. Purtymun, 1966, “The Hydrology and Chemical and Radiochemical Quality of Surface and Ground Water at Los Alamos, New Mexico, July 1957 through June 1961,” U.S. Geological Survey Administrative Release, Albuquerque, New Mexico.

Ball, T., M. Everett, P. Longmire, D. Vaniman, W. Stone, D. Larssen, K. Greene, N. Clayton, and S. McLin, 2002, “Characterization Well R-22 Completion Report,” Los Alamos National Laboratory

Report LA-13893-MS, Los Alamos, New Mexico.

Baltz, E. M., J. H. Abrahams, and W. D. Purtymun, 1963, "Preliminary report on geology and hydrology of Mortandad Canyon near Los Alamos, New Mexico, with reference to disposal of liquid low-level radioactive waste", 105 pp., U. S. Geological Survey Open-File Report, March 1963.

Blake, W.D., F. Goff, A.I. Adams, and D. Counce, 1995, “Environmental Geochemistry for Surface and Subsurface Waters in the Pajarito Plateau and Outlying Areas, New Mexico,” Los Alamos National Laboratory Report LA-12912-MS, Los Alamos, New Mexico.

Broxton, D., D. Vaniman, P. Longmire, B. Newman, W. Stone, A. Crowder, P. Schuh, R. Lawrence, E. Tow, M. Everett, R. Warren, N. Clayton, D. Counce, E. Kluk, and D. Bergfeld, 2002a, “Characterization Well MCOBT-4.4 and Borehole MCOBT-8.5 Completion Report,” Los Alamos National Laboratory Report LA-13993-MS, Los Alamos, New Mexico.

Broxton, D., R. Warren, P. Longmire, R. Gilkeson, S. Johnson, D. Rogers, W. Stone, B. Newman, M. Everett, D. Vaniman, S. McLin, J. Skalski, and D. Larssen, 2002b, “Characterization Well R-25 Completion Report,” Los Alamos National Laboratory Report LA-13909-MS, Los Alamos, New Mexico.

Broxton, D., R. Gilkeson, P. Longmire, J. Marin, R. Warren, D, Vaniman, A. Crowder, B. Newman, B. Lowry, D. Rogers, W. Stone, S. McLin, G. WoldeGabriel, D. Daymon, and D. Wycoff, 2001a, "Characterization Well R-9 Completion Report", Los Alamos National Laboratory Report LA-13742-MS, Los Alamos, New Mexico.

Broxton, D., D, Vaniman, W. Stone, S. McLin, M. Everett, A. Crowder, 2001b, "Characterization Well R-9i Completion Report", Los Alamos National Laboratory Report LA-13821-MS, Los Alamos, New Mexico.

Broxton, D., R. Warren, D. Vaniman, B. Newman, A. Crowder, M. Everett, R. Gilkeson, P. Longmire, J. Marin, W. Stone, S. McLin, and D. Rogers, 2001c, "Characterization Well R-12 Completion Report", Los Alamos National Laboratory Report LA-13822-MS, Los Alamos, New Mexico.

Broxton, D., D, Vaniman, W. Stone, S. McLin, J. Marin, R. Koch, R. Warren, P. Longmire, D. Rogers, N. Tapia, 2001d, "Characterization Well R-19 Completion Report", Los Alamos National Laboratory Report LA-13823-MS, Los Alamos, New Mexico.

Broxton, D.E. and P.G. Eller, eds., 1995, *Earth Science Investigations for Environmental Restoration—Los Alamos National Laboratory Technical Area 21*, Los Alamos National Laboratory Report LA-12934-MS, Los Alamos, New Mexico.

Digital Traffic Systems, 2003, Traffic study conducted at ten sites in Los Alamos County between January 28 and February 3, 2003, Digital Traffic Systems, 3600 Cerrillos Road, #205, Santa Fe, New Mexico.

EPA, 1994, “Module VIII: Special Conditions Pursuant to the 1984 Hazardous and Solid Waste Amendments to RCRA for Los Alamos National Laboratory, EPA I.D. MM0890010515,” U.S. Environmental Protection Agency, Region 6, Dallas, Texas.

Environmental Protection Group, 1995, “Environmental Surveillance at Los Alamos during 1993,” Los Alamos National Laboratory Report LlA-12973-ENV, Los Alamos, New Mexico.

Environmental Protection Group, 1994, “Environmental Surveillance at Los Alamos during 1992,” Los Alamos National Laboratory Report LA-12764-ENV, Los Alamos, New Mexico.

Kleinfelder, Inc., “Characterization Well R-21 Completion Report,” prepared for the U.S. Department of Energy and the National Nuclear Security Administration through the U.S. Army Corps of Engineers, Sacramento District.

Koch, R.J. and D.B. Rogers, 2003, “Water Supply at Los Alamos, 1998-2001,” Los Alamos National Laboratory Report LA-13985-PR, Los Alamos, New Mexico.

Kopp, B., A. Crowder, M. Everett, D. Vaniman, D. Hickmott, W. Stone, N. Clayton, S. Pearson, and D. Larssen, 2002, “Well CdV-R-15-3 Completion Report,” Los Alamos National Laboratory Report MS-13906-MS, Los Alamos, New Mexico.

LANL, 2003a, “Los Alamos National Laboratory General Part B Permit Renewal Application,” Revision 2.0, August 2003, LA-UR-03-5923, Los Alamos National Laboratory, Los Alamos, New Mexico

LANL, 2003, “Los Alamos National Laboratory Technical Area 54 Part B Permit Renewal Application,” Revision 3.0, LA-UR-03-3579, Los Alamos National Laboratory, Los Alamos, New Mexico.

LANL, 2002, "Environmental Surveillance at Los Alamos during 2001", LA-13979-ENV, Los Alamos National Laboratory, Los Alamos, New Mexico.

LANL, 2001, “Response to Request for Supplemental Information: Technical Adequacy Review, RCRA Permit Application, General Part A, April 1998, Revision 0.0, General Part B, October 1998, Revision 1.0, Los Alamos National Laboratory EPA ID No. NM0890010515”, LA-UR-01-6054, Los Alamos National Laboratory, Los Alamos, New Mexico.

LANL, 2000a, “Groundwater Annual Status Report for Fiscal Year 1999,” Los Alamos National Laboratory Status Report LA-13710-SR, Los Alamos, New Mexico.

LANL, 2000b, “Perchlorate Detected in Water-Supply Well,” Los Alamos National Laboratory News Release, July 20, 2000, Los Alamos, New Mexico.

LANL, 2000c, “Laboratory Detects Perchlorate in Shallow Groundwater,” Los Alamos National Laboratory News Release, March 2, 2000, Los Alamos, New Mexico.

LANL, 1998, "Hydrogeologic Workplan," May 22, 1998, Los Alamos National Laboratory, Los Alamos, New Mexico.

Longmire, P. June 13, 2003, Personal telecommunication between Peggy Reneau and Pat Longmire, Los Alamos, New Mexico.

Longmire,P., D. Broxton, W. Stone, B. Newman, R. Gilkeson, J. Marin, D, Vaniman, D. Counce, D. Rogers, R. Hull, S. McLin, R. Warren, 2001a, "Characterization Well R-15 Completion Report," Los Alamos National Laboratory Report LA-13749-MS, Los Alamos, New Mexico.

Longmire, P., July 17, 2001b, Personal communication between Kelly Bitner and Pat Longmire, via e-mail, Los Alamos, New Mexico.

McLin, S.G., M.E. van Eeckhout, and A. Earles, 2001, “Mapping 100-Year Floodplain Boundaries Following the Cerro Grande Wildfire,” LA-UR-01-5218, Los Alamos National Laboratory, Los Alamos, New Mexico.

McLin, S. G., 1992, "Determination of 100-Year Floodplain Elevations at Los Alamos National Laboratory," LA-12195-MS, Los Alamos National Laboratory, Los Alamos, New Mexico.

Nylander, C.L., K.A. Bitner, D. Broxton, K. Henning, R. Hull, A.S. Johnson, E.H. Keating, C. LaDelfe, P. Longmire, B.D. Newman, B. Robinson, D.B. Rogers, W.J. Stone, D. Vaniman, 2001, "Groundwater Annual Status Report for Fiscal Year 2000," Los Alamos National Laboratory Status Report LA-13820-SR, Los Alamos, New Mexico.

Pan Am World Services, Inc., 1986, "Asphalt Road Maintenance Report," Los Alamos National Laboratory, Los Alamos, New Mexico.

Purtymun, W.D., 1995, “Geologic and Hydrologic Records of Observation Wells, Test Holes, Test Wells, Supply Wells, Springs, and Surface Water in the Los Alamos Area,” Los Alamos National Laboratory Report LA-12883-MS, Los Alamos, New Mexico.

Purtymun, W.D., 1984, “Hydrologic Characteristics of the Main Aquifer in the Los Alamos Area: Development of Ground Water Supplies,” Los Alamos National Laboratory Report LA-9957-MS, Los Alamos, New Mexico.

Purtymun, W.D., 1975, “Geohydrology of the Pajarito Plateau with Reference to Quality of Water, 1949-1972,” Los Alamos Scientific Laboratory Informal Report, Los Alamos, New Mexico.

Purtymun, W.D., 1974, "Dispersion and Movement of Tritium in a Shallow Aquifer in Mortandad Canyon at the Los Alamos Scientific Laboratory," Los Alamos Scientific Laboratory Report LA-5716-MS, Los Alamos, New Mexico.

Purtymun, W.D., J.R. Buchholz, and T.E. Hakonson, 1977, "Chemical Quality of Effluents and Their Influence on Water Quality in a Shallow Aquifer," Journal of Environmental Quality, Vol. 6, No. 1, pp. 29-32.

Rogers, D.B., B.M. Gallaher, and E.L. Vold, 1996, "Vadose Zone Infiltration Beneath the Pajarito Plateau at Los Alamos National Laboratory," Los Alamos National Laboratory Report LA-UR-96-485, in press: New Mexico Geological Society—1996 Guidebook, Geology of the Los Alamos—Jemez Mountains Region.

Rogers, D.B. and B.M. Gallaher, 1995, "The Unsaturated Hydraulic Characteristics of the Bandelier Tuff," Los Alamos National Laboratory Report LA-12968-MS, Los Alamos, New Mexico.

RRES GPP, 2003a, "Characterization Well R-5 Completion Report," LA-UR-03-1600, Los Alamos National Laboratory, Los Alamos, New Mexico.

RRES GPP, 2003b, "Characterization Well R-8 Completion Report," LA-UR-03-1162, Los Alamos National Laboratory, Los Alamos, New Mexico.

RRES GPP, 2003c, "Characterization Well R-13 Completion Report," LA-UR-03-1373, Los Alamos National Laboratory, Los Alamos, New Mexico.

RRES GPP, 2003d, "Characterization Well R-14 Completion Report," LA-UR-03-1664, Los Alamos National Laboratory, Los Alamos, New Mexico.

RRES GPP, 2003e, "Characterization Well R-16 Completion Report," LA-UR-03-1841, Los Alamos National Laboratory, Los Alamos, New Mexico.

RRES GPP, 2003f, "Characterization Well R-20 Completion Report," LA-UR-03-1839, Los Alamos National Laboratory, Los Alamos, New Mexico.

RRES GPP, 2003g, "Characterization Well R-23 Completion Report," LA-UR-03-2059, Los Alamos National Laboratory, Los Alamos, New Mexico.

RRES GPP, 2003h, "Characterization Well R-32 Completion Report," LA-UR-03-3984, Los Alamos National Laboratory, Los Alamos, New Mexico.

Stone, W., D. Vaniman, P. Longmire, D. Broxton, M. Everett, R. Lawrence, and D. Larssen, 2002, "Characterization Well R-7 Completion Report," Los Alamos National Laboratory Report LA-13932-MS, Los Alamos, New Mexico.

Vaniman, D., J. Marin, W. Stone, B. Newman, P. Longmire, N. Clayton, R. Lewis, R. Koch, S. McLin, G. WoldeGabriel, D. Counce, D. Rogers, R. Warren, E. Kluk, S. Chipera, D. Larssen, and W. Kopp, 2002, "Characterization Well R-31 Completion Report," Los Alamos National Laboratory Report LA-13910-MS, Los Alamos, New Mexico.

Table A-1

Occurrences of Intermediate-Depth Perched Groundwater

Well	Perched Water Level Depth (ft)	Unit Containing Perched Saturation	Data Source
Pueblo Canyon			
TW-2A	120	Puye Formation	Purtymun, 1995
O-1	183	Puye Formation	Purtymun, 1995
TW-1A	180	Cerros del Rio Basalt	Purtymun, 1995
R-5	375	Cerros del Rio Basalt	Longmire, 2001b
Los Alamos Canyon			
H-19	(20-ft interval)	Guaje Pumice Bed	LANL, 1995
R-7	378	Guaje Pumice Bed/Puye Formation	Longmire, 2001b
LAO(A)	295	Guaje Pumice Bed	LANL, 1995
LADP-3	325	Guaje Pumice Bed	LANL, 1995
O-4	253	Puye Formation	Purtymun, 1995
R-9	137	Cerros del Rio Basalt	Broxton et al., 2000
R-9	264	Cerros del Rio Basalt	Broxton et al., 2000
R-9	524	Cerros del Rio Basalt	Broxton et al., 2000
Sandia Canyon			
R-12	424	Cerros del Rio Basalt	Broxton et al., 2000
PM-1	450	Cerros del Rio Basalt	Purtymun, 1995
Mortandad Canyon			
MCM-51	55	Tsankawi/Cerro Toledo	LANL, 1997
MCM-5.9	105	Tsankawi/Cerro Toledo	LANL, 1997
R-15	646	Cerros del Rio Basalt	Longmire et al., 2000
Pajarito Canyon			
SHB-4	145	Cerro Toledo interval	LANL, 1998
R-19	909	Puye Formation	Longmire, 2001b
54-1016	592	Cerros del Rio basalt	LANL, 1998
Cañon de Valle			
R-25	747	Otowi Member	Nylander et al., 2001
Ancho Canyon			
R-31	440	Cerros del Rio basalt	Marin, 2000

Table A-2

Estimated West-East Hydraulic Gradients

Pair of Wells				West-East Distance (m)	Gradient (m/m)
Upgradient Well	**Water level (m)**	Downgradient Well	Water level (m)		
R25	1836	CDV15-3	1833	2189	-0.02884
CDV15-3	1833	R19	1795	4710	-0.02149
DT-10	1805	R22	1747	5195	-0.01121
R15	1785	R12	1738	3684	-0.01283

Table A-3

Permeability Data for Rocks in the Regional Aquifer

Stratigraphic Unit	Well	Permeability (log m^2)	Hydraulic Conductivity (ft/day)	**Hydraulic Conductivity (m/yr)**
Tsf	O-1	-12.64	0.63	70.11
	LA-6	-12.36	1.22	135.76
	LA-5	-12.84	0.4	44.51
	LA-4	-12.56	0.44	48.96
	LA-3	-12.8	0.44	48.96
	LA-2	-12.77	0.47	52.30
	LA-1B	-12.35	1.25	139.10
	G-4	-12.26	1.51	168.03
	G-3	-12.59	0.71	79.01
	G-2	-12.36	1.22	135.76
	G-1A	-12.36	1.22	135.76
	G-1	-12.47	0.94	104.60
Tsfuv	DT-9	-11.23	16.35	1819.44
	O-4	-11.84	4.02	447.35
	PM-4	-11.94	3.22	358.32
Tpf	TW-8	-11.92	3.35	372.79
	R-15	-12.14	2.01	223.67
	R-15	-11.92	3.32	369.45
	R-19	-11.2	17.5	1947.41
	R-19	-11.15	19.6	2181.10
	CDV-R-15	-13.05	0.25	27.82
	CDV-R-15	-13.44	0.1	11.13
	R-9a	-15.22	.002	0.18
	R-12a	-17.8	4.E-6	.0005
	R-12a	-15.01	.003	0.30
Tpt	TW-3	-11.24	16.08	1789.39
	TW-2	-10.93	32.39	3604.38
	TW-1	-12.71	0.54	60.09

Stratigraphic Unit	Well	Permeability (log m^2)	Hydraulic Conductivity (ft/day)	**Hydraulic Conductivity (m/yr)**
Tb	PM-5	-12.59	0.71	79.01
	G-5	-12.38	1.17	130.20
	DT-10	-11.27	14.87	
	R-31	-12.41	1.07	119.07
	R-31	-12.82	0.42	46.74
	R-31	-11.88	3.62	402.84
	R-31	-14.49	0.01	1.11
	R-31	-14.6	0.01	1.11
	R-9i	-10.87	37.07	4125.17
	R-9i	-12.55	0.78	86.80
	R-9[a]	-14.9	.003	0.30
	R-12[a]	-18.4	1.1E-6	.00012
Tt	TW-4	-12.04	2.55	283.77
Average[b]		-12.30	1.38	153.25

[a] Derived from core measurements

[b] Excluding core measurements

Table A-4

Groundwater Velocity Estimate

Gradient **(m/m)**	Hydraulic Conductivity (m/yr)	Porosity	Calculated Velocity (m/yr)
.019[a]	176 m/yr[b]	0.1[c]	33

[a] Average of gradients shown in Table A-2

[b] Geometric average of data shown in Table A-3, excluding LA well field (due to its lower permeability)

[c] At low end of range typically reported for sedimentary rocks (0.1 – 0.3)

TA-3

ATTACHMENT A

FACILITY DESCRIPTION

TA-3

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LIST OF ABBREVIATIONS/ACRONYMS

AASHTO	American Association of State Highway and Transportation Officials
CMR	Chemistry and Metallurgy Research
CSU	container storage unit
LANL	Los Alamos National Laboratory
20 NMAC 4.1	New Mexico Administrative Code, Title 20, Chapter 4
TA	technical area

TA-3
ATTACHMENT A
FACILITY DESCRIPTION

The information provided in this Attachment Section conforms to the applicable requirements of the New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20 NMAC 4.1) [1-1-97]. The following subject areas are addressed in this Attachment:

- A general description of Technical Area (TA) 3, Building 29 (TA-3-29), Chemistry and Metallurgy Research (CMR) Building at Los Alamos National Laboratory (LANL) [20 NMAC 4.1, Subpart IX, 270.14(b)(1)];
- Site-specific traffic patterns, volume, and control [20 NMAC 4.1, Subpart IX, 270.14(b)(10)];
- Site-specific location information for compliance with seismic and floodplain standard requirements [20 NMAC 4.1, Subpart IX, 270.14(b)(11), and 20 NMAC 4.1, Subpart V, 264.18(a) and (b)];
- Site-specific topographic map requirements [20 NMAC 4.1, Subpart IX, 270.14(b)(19)];
- Site-specific groundwater monitoring and protection information [20 NMAC 4.1, Subpart IX, 270.14(c), and 20 NMAC 4.1, Subpart V, 264.90(a)].

A LANL-wide facility description addressing additional regulatory requirements is provided in this Attachment's General Section.

A.1 TA-3-29 GENERAL DESCRIPTION [20 NMAC 4.1, SUBPART IX, 270.14(B)(1)]

TA-3 is located in the northern portion of LANL (Figure A-1 of LANL, 1999) on South Mesa between Los Alamos Canyon on the north and Two Mile Canyon on the south. Sandia and Mortandad Canyons head on the east margin of TA-3, forming steep cliffs at the top of the canyon walls. The elevation at TA-3 ranges from 7,100 to 7,500 feet above mean sea level. TA-3-29, the CMR Building, was established in 1952 as a research facility at TA-3. It is a three-story structure containing offices, laboratories, and one container storage unit (CSU). The TA-3-29 CSU is located in the southwest corner of the CMR Building (Figure A-2 of LANL, 1999) in the basement of Wing 9; it consists of three storage locations within Rooms 9010, 9020, and 9030 as shown on Figure A-3 of LANL, 1999. Descriptions of these storage locations are provided in Section 2.0 and Attachment G (LANL, 1999).

A.2 TRAFFIC PATTERNS [20 NMAC 4.1, SUBPART IX, 270.14(B)(10)]

General traffic pattern information, traffic volumes, and traffic control signals for the LANL-wide facility are provided in the general Section A.2 of this Permit Attachment~~Appendix A of the LANL General Part B (LANL, 1998a)~~.

A.2.1 Routes of Travel

TA-3-29 is located on Diamond Drive. The primary traffic routes that may be used to transport hazardous and mixed waste to or from the TA-3-29 CSU include Pajarito Road, Pecos Drive, DP Road, Trinity Drive (State Road 502), Mesita del Buey Road, and Diamond Drive; a lesser-used traffic route may include West Jemez Road (State Road 501) (Figure A-4 of LANL, 1999).

A.2.2 Traffic Volumes

According to a 1997 traffic study, the peak traffic periods in the vicinity of TA-3-29 are between 7:30 and 8:30 a.m., 12:15 and 1:15 p.m., and 4:30 and 5:30 p.m. (Los Alamos County, 1997). The traffic study was conducted at the intersection of Diamond Drive and Trinity Drive, just north of the TA-3-29 area. Maps and data from the cited study are included in Supplement 4 of the LANL General Part B (LANL, 1998a). The Diamond Drive and Trinity Drive intersection had a volume of 3,152 vehicles from 7:30 to 8:30 in the morning; 3,223 vehicles from 12:15 to 1:15 in the afternoon; and 2,815 vehicles from 4:30 to 5:30 in the afternoon, according to the study.

Maps and data from a traffic count conducted at the same intersection in April 1998 are also included in Supplement 4 of the LANL General Part B (Los Alamos County, 1998). The peak traffic periods for the 1998 study are between 7:15 and 8:15 a.m., 12:30 and 1:30 p.m., and 5:00 and 6:00 p.m. The traffic volume from 7:15 to 8:15 in the morning was 2,373 vehicles. Between 12:30 and 1:30 in the afternoon the volume was 2,588 vehicles. From 5:00 to 6:00 in the afternoon, the volume was 2,648 vehicles. The count is lower because Los Alamos High School was on spring break during this traffic study.

A.2.3 Traffic Control Signals

Traffic flow in the vicinity of TA-3-29 at LANL is controlled by traffic lights, stop signs, and yield signs. Traffic lights are in place at major intersections, including the intersections of Diamond Drive and Eniwetok Drive at the northeast boundary of TA-3-29, and Diamond Drive and Sigma Drive at the southeast boundary of TA-3-29. Traffic signs are used at "T" intersections

throughout LANL, including the intersection of Pajarito Road and Diamond Drive south of TA-3-29.

Traffic control signals in the vicinity of TA-3-29 include stop signs, posted speed limits, and other traffic and pedestrian control signs. The locations of existing signs in the vicinity of TA-3-29 are shown on Figure A-5 (LANL, 1999).

A.2.4 Road Surfacing and Load Bearing Capacity

Roads in the vicinity of TA-3-29 are generally four-lane roads with asphaltic concrete surfaces. Load-bearing capacity for these roads is 32,000 pounds per axle. These roads are typically constructed with a 6-inch-thick base overlain with a 3-inch-thick asphaltic concrete surface. These roads were designed and constructed to meet the American Association of State Highway and Transportation Officials (AASHTO) specification HS-20 (AASHTO, 1996).

A.3 LOCATION INFORMATION

A.3.1 Seismic Standard [20 NMAC 4.1, Subpart IX, 270.14(b)(11)(i and ii) and 20 NMAC 4.1, Subpart V, 264.18(a)]

The hazardous and mixed waste management unit at TA-3-29 is exempt from the seismic standards in 20 NMAC 4.1, Subpart IX, 270.14(b)(11), and 20 NMAC 4.1, Subpart V, 264.18(a) [1-1-97], because this unit existed prior to January 25, 1985, and July 25, 1990, when the State of New Mexico received hazardous and mixed waste authorization, respectively.

A.3.2 Floodplain Standard [20 NMAC 4.1, Subpart IX, 270.14(b)(11)(iii) and 270.14(b)(19)(ii); 20 NMAC 4.1, Subpart V, 264.18(b)]

In accordance with 20 NMAC 4.1, Subpart IX, 270.14(b)(11)(iii) [1-1-97], it has been determined that the CSU addressed in this permit application is not located within the 100-year floodplain boundary. LANL has mapped all 100-year floodplain boundaries within the LANL complex, as required in “Module VIII: Special Conditions Pursuant to the 1984 Hazardous and Solid Waste Amendments to RCRA for Los Alamos National Laboratory, EPA I.D. NM0890010515" (EPA, 1994). A report demonstrating that TA-3 is not within the 100-year floodplain has been published documenting the floodplain mapping procedures (McLin, 1992). This report is included as Supplement 5 of the LANL General Part B (LANL, 1998a).

A.4 TOPOGRAPHIC MAPS [20 NMAC 4.1, SUBPART IX, 270.14(B)(19)]

Topographic maps and figures are ~~provided in LANL, 1999~~ located in the following referenced documents to meet the requirements of ~~20 NMAC 4.1~~40 CFR, Subpart IX, 270.14(b)(19) ~~[1-1-97]~~. The maps include the map scale, the date of ~~-~~preparation, and a north arrow. The maps and figures used to fulfill these regulatory requirements include the following:

- A LANL-wide 100-year floodplain map is provided on page 36 of the report included as Supplement 5 of the LANL General Part B (LANL, 1998a).
- A map showing surface waters, including intermittent streams, near TA-3-29 is included as Figure A-6 (LANL, 1999).
- Surrounding land uses are shown on Figure 1-1 of this Permit~~Figure A-1 (LANL, 1999)~~.
- Wind roses for TA-6, the location of the closest wind observation tower to TA-3, are shown on Figures A-7 and A-8 (LANL, 1999).
- A map showing the legal boundaries of LANL (including TA-3) is provided as Figure 2-8 of this Permit~~Map 1 in the "Los Alamos National Laboratory General Part A Permit Application," Revision 0.0 (LANL, 1998b), hereinafter referred to as the LANL General Part A~~.
- Access control features at TA-3-29 (e.g. fences, gates) are shown on Figure 2-1.
- A map showing supply wells, monitoring wells, test wells, springs, and surface-water sampling stations near TA-3-29 is included as Figure A-6 (LANL, 1999).
- The locations of buildings, hazardous and or mixed waste management units and structures, and loading and unloading areas at TA-3-29 are shown on Figure A-6 (LANL, 1999).
- A map showing National Pollutant Discharge Elimination System discharge structure locations is included in the LANL General Part A (LANL, 1998b).
- Storm, sanitary, and process sewer systems at LANL are shown on Map A-1 of the LANL General Part B (LANL, 1998a).
- Digital elevation model drainage features are shown on Figure A-10 (LANL, 1999).
- Fire stations serving LANL and the County of Los Alamos are shown on Figure E-2 of Appendix E in the LANL General Part B (LANL, 1998a).
- The equipment cleanup area for LANL is located at TA-50-1. The location of TA-50-1 is shown on a map in the LANL General Part A (LANL, 1998b).

Contour lines on all topographic maps are in intervals sufficient to detail natural drainage at LANL and in the vicinity of the waste management unit. As provided in 20 NMAC 4.1, Subpart IX, 270.14(b)(19) [1-1-97], LANL has submitted the maps to the New Mexico Environment Department at these scales and contour intervals due to the size of the waste management units, the extent of the LANL facility, and the topographic relief in the area.

A.5 GROUNDWATER MONITORING [20 NMAC 4.1, SUBPART IX, 270.14(C) AND 20 NMAC 4.1,SUBPART V, 264.90(A)]

Groundwater monitoring information is provided in Appendix A of the LANL General Part B (LANL, 1998a).

A.6 OTHER PERMIT ACTIVITIES

Other types of Resource Conservation and Recovery Act permits include, but are not limited to, the following;

- Permits by Rule
- Emergency Permits
- Hazardous Waste Incinerator Permits
- Permits for Land Treatment Demonstrations Using Field Test or Laboratory Analyses
- Interim Permits for Underground Injection Control Program Wells
- Research, Development, and Demonstration Permits
- Permits for Boilers and Industrial Furnaces Burning Hazardous Waste

Currently, none of these permit types are relevant for operations at TA-3-29.

A.7 REFERENCES

AASHTO, 1996, “Standard Specifications for Highway Bridges,” 16th Edition, American Association of State Highway and Transportation Officials.

EPA, 1994, “Module VIII: Special Conditions Pursuant to the 1984 Hazardous and Solid Waste Amendments to RCRA for Los Alamos National Laboratory, EPA I.D. NM0890010515.”

LANL, 1999, “Los Alamos National Laboratory Technical Area 3, Building 29, Chemistry and Metallurgy and Research Building, Part B Permit Application,“ Revision 0.0 (Project No. 774830.21), Los Alamos National Laboratory, Los Alamos, New Mexico.

LANL, 1998a, “Los Alamos National Laboratory General Part B Permit Application,” Revision 1.0, Los Alamos National Laboratory, Los Alamos, New Mexico.

LANL, 1998b, “Los Alamos National Laboratory General Part A Permit Application,” Revision 0.0, Los Alamos National Laboratory, Los Alamos, New Mexico.

Los Alamos County, 1998, “Traffic Counts,” Los Alamos County Public Works Department, Traffic Engineering Group.

Los Alamos County, 1997, “Traffic Counts,” Los Alamos County Public Works Department, Traffic Engineering Group.

McLin, 1992, “Determination of 100-Year Floodplain Elevations at Los Alamos National Laboratory,” LA-12195-MS, Los Alamos National Laboratory, Los Alamos, New Mexico.

TA-16

ATTACHMENT A

FACILITY DESCRIPTION

TA-16

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TA-16

LIST OF ABBREVIATIONS/ACRONYMS

20.4.1 NMAC	New Mexico Administrative Code, Title 20, Chapter 4, Part 1
AASHTO	American Association of State Highway and Transportation Officials
HE	high explosives
LANL	Los Alamos National Laboratory
OB	open burning
TA	technical area

TA-16
ATTACHMENT A
FACILITY DESCRIPTION

The information in this Attachment conforms to the applicable requirements of the New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20.4.1 NMAC), revised June 14, 2000 [6-14-00]. The following subject areas are addressed in this Attachment Section:

- A general description of Technical Area (TA) 16 at Los Alamos National Laboratory (LANL) [20.4.1 NMAC § 270.14(b)(1)];
- Site-specific traffic patterns, volume, and control [20.4.1 NMAC § 270.14(b)(10)];
- Site-specific location information for compliance with the seismic and floodplain standard requirements [20.4.1 NMAC § 270.14(b)(11), and 20.4.1 NMAC § 264.18(a) and (b)];
- Site-specific topographic map requirements [20.4.1 NMAC § 270.14(b)(19)];
- Site-specific groundwater monitoring and protection information [20.4.1 NMAC § 270.14(c), and 20.4.1 NMAC § 264.90(a)].

A LANL-wide facility description addressing additional regulatory requirements is provided in this Attachment's General Section.

A.1 TA-16 GENERAL DESCRIPTION [20.4.1 NMAC § 270.14(B)(1)]

TA-16 is located in the southwestern portion of LANL (Figure A-1 of LANL, 2003). It is situated on a broad mesa that is bounded on the north by Cañon de Valle, on the south by State Road 4 and Bandelier National Monument, and on the west by West Jemez Road (State Road 501) and the Santa Fe National Forest. Elevation ranges from approximately 7,700 feet at the west end of the TA to approximately 6,800 feet at the lower east end. Topography is varied, ranging from steep precipitous canyon walls to sloping mesa tops.

The open burning (OB) units at TA-16 are shown on Figures A-2 and A-3 (LANL, 2003). The TA-16 OB units include the TA-16-388 Flash Pad and the TA-16-399 HE Burn Tray. The TA-16-388 Flash Pad is where high explosives (HE) contamination is removed from excess equipment or scrap, HE-contaminated liquids and dry HE are burned, and wet HE is dried and burned. The TA-16-399 HE Burn Tray is used for the destruction of solid HE material. Descriptions of these two units are provided in Section 2.0 and Attachment G (LANL, 2003).

A.2 TRAFFIC PATTERNS [20.4.1 NMAC § 270.14(B)(10)]

General traffic pattern information, traffic volumes, and traffic control signals for the LANL-wide facility are provided in the general Section A.2 of this Attachment~~Appendix A of the LANL General Part B~~.

A.2.1 Routes of Travel

The primary traffic routes that may be used to transport hazardous waste to or from the OB units at TA-16 include Pajarito Road, Trinity Drive (State Road 502), Diamond Drive, West Jemez Road (State Road 501), Anchor Ranch Road, K-Site Road, State Road 4, and East Jemez Road (see Map 1 in the most recent version of the "Los Alamos National Laboratory General Part A Permit Application" [hereinafter referred to as the LANL General Part A] and Figure A-4 of LANL, 2003).

A.2.2 Traffic Volumes

Due to the nature of operations at TA-16 and because the TA is in a secured area, the traffic volume in the area of the Burn Ground is kept to an absolute minimum to conduct safe treatment operations. Vehicle types are generally cars, light- and medium-duty trucks, vans, tank trucks, dump trucks, and sometimes forklifts and cranes. At the TA-16 Burn Ground, vehicles may be parked next to the Control Building (TA-16-389), driven on the TA-16 Burn Ground roads, or parked adjacent to the OB units.

A.2.3 Traffic Control Signals

Traffic control signals within TA-16 include stop signs, posted speed limits, and other traffic and pedestrian control signs. The locations of existing signs in the vicinity of the TA-16 Burn Ground are shown on Figure A-4 (LANL, 2003).

A.2.4 Road Surfacing and Load-Bearing Capacity

Roads within TA-16 are generally two-lane roads with asphaltic-concrete surfaces. Load-bearing capacity for these roads is 32,000 pounds per axle. These roads are typically constructed with a 6-inch-thick base overlain with a 3-inch-thick asphaltic-concrete surface. These roads were designed and constructed to meet the American Association of State Highway and Transportation Officials (AASHTO) specification HS-20 (AASHTO, 1996).

A.3 LOCATION INFORMATION [20.4.1 NMAC § 270.14(B)(11)]

A.3.1 Seismic Standard [20.4.1 NMAC § 270.14(b)(11)(i and ii) and 20.4.1 NMAC § 264.18(a)]

The OB units at the TA-16 Burn Ground are exempt from the seismic standards in 20.4.1 NMAC § 270.14(b)(11), and 20.4.1 NMAC § 264.18(a) [6-14-00], because they existed prior to November 19, 1980, the effective date of regulation for hazardous waste.

A.3.2 Floodplain Standard [20.4.1 NMAC §§ 270.14(b)(11)(iii through v) and 270.14(b)(19)(ii); 20.4.1 NMAC § 264.18(b)]

The OB units at TA-16 are located on top of a broad mesa. In accordance with 20.4.1 NMAC § 270.14(b)(11)(iii through v) [6-14-00], these hazardous waste management units are not located within the 100-year floodplain boundary. Additional floodplain information is provided in Appendix A of the LANL General Part B.

A.4 TOPOGRAPHIC MAPS [20.4.1 NMAC § 270.14(B)(19)]

Topographic maps and figures are provided in LANL, 2003 or referenced to meet the requirements of 20.4.1 NMAC § 270.14(b)(19) [6-14-00]. The maps include the map scale, the date of preparation, and a north arrow. The maps and figures used to fulfill these regulatory requirements include the following:

- LANL-wide 100-year floodplain maps were provided as Appendix C of the "Response to Request for Supplemental Information: Technical Adequacy Review, RCRA Permit Application; General Part A, April 1998, Revision 0.0; General Part B, October 1998, Revision 1.0; Los Alamos National Laboratory, EPA ID No. NM0890010515" (LANL, 2001) .
- A map showing surface waters, including intermittent streams, near the OB units at TA-16 is included as Figure A-5 (LANL, 2003).
- Surrounding land uses are shown on Figure 1-1 of this Permit~~ Map 1 in the LANL General Part A~~.
- Wind roses for TA-6 and TA-49, the locations of the closest wind observation towers to TA-16, are shown on Figures A-6 and A-7 (LANL, 2003).
- A map showing the legal boundaries of LANL (including TA-16) is provided as Figure 2-8 of this Permit~~Map A-2 in the LANL General Part B~~.
- Access control features for TA-16 (e.g. fences, gates) are shown on Figure 2-2 of this Permit~~A-8 (LANL, 2003)~~.
- The locations of buildings, hazardous waste management units and structures, and loading and unloading areas at TA-16 are shown on Figure A-5 (LANL, 2003).
- A map showing National Pollutant Discharge Elimination System discharge structure locations is included as Map 2 in the LANL General Part A

- Storm, sanitary, and process sewer systems at LANL are shown on Map A-1 of the LANL General Part B.
- Drainage control features at the TA-16 Burn Ground are shown on Figure A-9 of LANL, 2003.
- Fire stations serving LANL and the County of Los Alamos are shown on Figure E-2 of Appendix E in the LANL General Part B.
- The equipment cleanup area for LANL is located at TA-50-1. The location of TA-50-1 is shown on Figure 50-1 in the LANL General Part A.

Contour lines on all topographic maps are in intervals sufficient to detail natural drainage at LANL and in the vicinity of the waste management units. As provided in 20.4.1 NMAC § 270.14(b)(19) [6-14-00], LANL has submitted the maps to the New Mexico Environment Department at these scales and contour intervals due to the size of the waste management units, the extent of the LANL facility, and the topographic relief in the area.

A.5 GROUNDWATER MONITORING [20.4.1 NMAC § 270.14(C) AND 20.4.1 NMAC § 264.90(A)]

Groundwater monitoring information is provided in Appendix A of the LANL General Part B.

A.6 OTHER PERMIT ACTIVITIES

Other types of Resource Conservation and Recovery Act permits include, but are not limited to, the following:

- Permits by Rule
- Emergency Permits
- Hazardous Waste Incinerator Permits
- Permits for Land Treatment Demonstrations Using Field Test or Laboratory Analyses
- Interim Permits for Underground Injection Control Program Wells
- Research, Development, and Demonstration Permits
- Permits for Boilers and Industrial Furnaces Burning Hazardous Waste

Currently, none of these permit types are relevant for the operations at TA-16.

A.7 REFERENCES

AASHTO, 1996, "Standard Specifications for Highway Bridges," 16th Edition, American Association of State Highway and Transportation Officials.

LANL, 2003, "Los Alamos National Laboratory Technical Area 16 Part B Permit Renewal Application," Revision 4.0, June 2003, LA-UR-03-3903, Los Alamos National Laboratory, Los Alamos, New Mexico

LANL, 2001, "Response to Request for Supplemental Information: Technical Adequacy Review, RCRA Permit Application; General Part A, April 1998, Revision 0.0; General Part B, October 1998, Revision 1.0, Los Alamos National Laboratory, EPA ID No. NM0890010515," LA-UR-01-6054, Los Alamos National Laboratory, Los Alamos, New Mexico.

TA-50

ATTACHMENT A

FACILITY DESCRIPTION

TA-50

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TA-50
LIST OF ABBREVIATIONS/ACRONYMS

20.4.1 NMAC	New Mexico Administrative Code, Title 20, Chapter 4, Part 1
cm	centimeters
cm/hr	centimeters per hour
CSU	container storage unit
DOE	U.S. Department of Energy
ft	feet/foot
in.	inch(es)
km	kilometer
LANL	Los Alamos National Laboratory
RCRA	Resource Conservation and Recovery Act
TA	Technical Area
WCRRF	Waste Characterization, Reduction, and Repackaging Facility (TA-50-69)

TA-50
ATTACHMENT A
FACILITY DESCRIPTION

The information in this Attachment Section conforms with the applicable requirements of the New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20.4.1 NMAC), revised June 14, 2000 [6-14-00]. The following subject areas are addressed:

- A general description of Technical Area (TA) 50 at Los Alamos National Laboratory (LANL) (20.4.1 NMAC, Subpart IX, 270.14(b)(1) [6-14-00])
- Site-specific traffic patterns, volume, and control (20.4.1 NMAC, Subpart IX, 270.14(b)(10) [6-14-00])
- Site-specific location information for compliance with seismic and floodplain standard requirements (20.4.1 NMAC, Subpart IX, 270.14(b)(11), and 20.4.1 NMAC, Subpart V, 264.18(a) and (b) [6-14-00])
- Site-specific topographic map requirements (20.4.1 NMAC, Subpart IX, 270.14(b)(19) [6-14-00])
- Site-specific groundwater monitoring and protection information (20.4.1 NMAC, Subpart IX, 270.14(c) and 20.4.1 NMAC, Subpart V, 264.90(a) [6-14-00])

A LANL-wide facility description addressing additional regulatory requirements is provided in this Attachment's General Section.

A.1 TA-50 GENERAL DESCRIPTION [20.4.1 NMAC, SUBPART IX, 270.14(B)(1)]

TA-50 is located at the northeast corner of the intersection of Pajarito Drive and Pecos Road, on the finger mesa bounded by Mortandad Canyon to the north and Two-Mile Canyon to the south. Mesa-top elevations at TA-50 range from approximately 7,250 to 7,280 feet (ft) above mean sea level. Figure A-1 (LANL, 2002) depicts the TA-50 location within the LANL site boundary, and its location relative to other TAs. Figure ~~A-2 (LANL, 2002)~~2-3 of this Permit depicts facilities, structures, and hazardous and mixed waste units within the TA-50 boundary. Nearby facilities are described in Section A.1.4 of this attachment. The nearest point of unrestricted public access to TA-50 outside the LANL site boundary is the Royal Crest Trailer Park 1,500 meters (3,770 ft) north of TA-50. The residential areas of Los Alamos and White Rock are within a 17-kilometer (km) (10-mile) radius of TA-50 and together have a population of approximately 18,200.

The waste management units addressed in this Attachment Section include two container storage units located at TA-50-69. Other waste management units have been identified in previous Part A or Part B permit applications. These hazardous and/or mixed waste management units are identified in Table A-1.

Table A-1

Waste Management Unit Status at Technical Area 50

Waste Management Unit	Unit Type	Current Status
TA-50-1, Room 59	CSU	Closed [a]
TA-50-37, Rooms 115, 117 and 118	CSU	Closed [a]
TA-50-69, Indoor Area	CSU	Requesting Permit Renewal [b]
TA-50-69, Outdoor Area	CSU	Requesting Permit Renewal [b]
TA-50-114	CSU	Closed [aa]
TA-50-1, Rooms 35, 36, and 38/38A	CSU	Administratively Removed [c]
Solidification/Cementation Unit	Treatment	Administratively Removed [c]
Controlled Air Incinerator	Treatment	Closed [d]
Batch Waste Treatment Unit	Treatment	Closed [e]
TA-50-137	CSU	Administratively Removed [c]
TA-50-138	CSU	Administratively Removed [c]
TA-50-139/Storage Pads	CSU	Administratively Removed [c]
TA-50-140/Storage Pads	CSU	Administratively Removed [c]

[a] Closure certification verification letter dated 11/15/04.

[aa] Withdrawal of the RAMROD permit modification request was approved in April 1998.

[b] Detailed descriptions provided in Attachment G of this permit renewal application.

[c] Waste management units that were proposed but never constructed and/or where waste was never stored, treated, or disposed.

[d] "Los Alamos National Laboratory controlled-Air Incinerator RCRA Closure Certification Report," Benchmark Environmental Corporation, Albuquerque, New Mexico, 1998.

[e] "Closure Certification Report TA-50 Batch Waste Treatment Unit," IT Corporation, Albuquerque, New Mexico, 1994.

CSU = container storage unit

Waste management units addressed~~s~~ in this Attachment Section include two container storage units (CSU) located in the southwest quadrant of TA-50 and identified as the TA-50-69, Indoor CSU and the TA-50-69, Outdoor CSU. Detailed descriptions of these CSUs are provided in Attachment G of this permit renewal application.

A.1.1 Meteorology and Hydrology

The climate and surface winds are described in the LANL General Part B.

A.1.2 Wells and Surface Waters [20.4.1 NMAC, Subpart IX, 270.14(b)(19)(iii) and (ix)]

The only hydrological characteristic specific to operations conducted at TA-50 is surface runoff in the small drainage off the mesa for brief periods during spring snowmelt and intense summer thunderstorms. Surface grading and other storm water controls prevent accumulation of storm water and snowmelt (Appendix A, LANL General Part B). Summer storms on the Pajarito Plateau can generate high discharge rates and may reach a maximum discharge in less than two hours. High discharge rates can transport suspended and bed sediments down the canyons. Snow, however, melts slowly in the spring and runs off over a period of several weeks to several months at a low discharge rate. Stream flow is ephemeral in Cañada del Buey to the north and Pajarito Canyon to the south of Mesita del Buey, occurring primarily during snowmelt or thunderstorms. Situated on top of the mesa, TA-50 is not affected by stream flooding or runoff.

A.1.3 Surrounding Land Use [20.4.1 NMAC, Subpart IX, 270.14(b)(19)(iv)]

No industrial facilities, except for those within LANL, are near TA-50. The following buildings or facilities are located within the TA-50 boundary:

- Radioactive Liquid Waste Treatment Facility, TA-50-1
- TA-50-37
- Engineering Sciences and Applications Division, TA-50-54
- WCRRF, TA-50-69
- Portable office trailer, TA-50-84
- Portable office trailer, TA-50-196
- U.S. West relay facility, TA-50-184
- Material Disposal Area-C Landfill (inactive)

As depicted on Figure ~~A-1 (LANL, 2002)~~2-8 of this Permit, the TAs that border TA-50 include: TA-35, TA-40, TA-55, TA-63, and TA-66. TA-35, located northeast of TA-50, includes facilities that conduct nuclear safeguards research and development. TA-40, which is south and west of TA-50, is used in developing special detonators for the initiation of high-explosive systems. The facilities at TA-55, west of TA-50, conduct plutonium processing and metallurgy research.

TA-66, southeast of TA-50, includes the Advanced Technology Assessment Center. The types of activities conducted, the separation distances, and administrative controls ensure that these nearby TAs do not affect the safety of operations conducted at TA-50.

A.2 TRAFFIC PATTERNS [20.4.1 NMAC, SUBPART IX, 270.14(B)(10)]

General traffic pattern information, traffic volume, and traffic control signals for the LANL-wide facility are provided in the general Section A.2 of this Permit Attachment~~Appendix A of the LANL General Part B (LANL, 1998a)~~.

A.2.1 Routes of Travel

The primary traffic routes that may be used to transport hazardous and mixed waste to and from TA-50 include Pajarito Road, Pecos Drive, and Mesita del Buey Road as shown on Figure A-3 (LANL, 2002). Lesser-used traffic routes include Diamond Drive and West Jemez Road (State Road 501). Containers received at TA-50, are also moved minimal distances on road surfaces within the TA.

A.2.2 Traffic Volumes and Control

The only local access road to TA-50 is Pajarito Road. Approximately 8,000 automobiles traverse Pajarito Road daily as stated in “Environmental Surveillance at Los Alamos During 1990” (LANL, 1992). The U.S. Department of Energy controls all of the area within the Laboratory site boundary and has the authority to completely restrict access. LANL routinely closes Pajarito Road for activities such as the transport of hazardous waste to and from TA-50.

During normal business hours, the traffic pattern consists of personal and government-owned passenger vehicles entering the area through the open western gate, going to a parking area, and parking. After normal business hours, access through this western gate is by badge-reader only. Throughout normal business hours, the eastern gate may remain open to receive deliveries. After normal business hours, this eastern gate is padlocked. Throughout the workday, the average flow of traffic is approximately 160 vehicles per day. Authorized government vehicles only are permitted on the road leading around the southern end of TA-50-1 and in the area to the southeast of TA-50-1. Figure 2-3 (Permit Part 2) depicts the gates and area discussed.

A.2.3 Traffic Control Signals

Traffic control signals within TA-50 include stop signs, posted speed limits, and other traffic and pedestrian control signs. The locations of existing signs at TA-50 are shown on Figure A-4 (LANL, 2002).

A.3 LOCATION INFORMATION [20.4.1 NMAC, SUBPART IX, 270.14(B)(11)]

A.3.1 Geology

Geologic aspects (Longmire et. al., 1996) of interest at TA-50 include the following:

- Detailed stratigraphy of the upper units of the Bandelier Tuff, including contacts between units that may form barriers to migration or create paths to divert liquid or vapor movement.
- Joints in the Bandelier Tuff that may provide paths for liquid and vapor movement.
- Mineralogy of the geologic strata that may be important in the retardation of contaminant movement.
- Faulting that may provide zones of fracturing along which contaminant transport may be enhanced.
- Surface erosion that could potentially transport contaminants.

A.3.1.1 Seismology [20.4.1 NMAC, Subpart IX, 270.14(b)(11)(i) and (ii), and 20.4.1 NMAC, Subpart V, 264.18(a)]

TA-50 is located in Los Alamos, New Mexico; therefore, pursuant to 20.4.1 NMAC, Subpart IX, 270.14(b)(11)(i) [6-14-00], the seismic standard of 20.4.1 NMAC, Subpart V, 264.18(a) [6-14-00], is applicable.

A geologic field investigation, which consisted of exploratory trenching, was conducted within 3,000 ft of TA-50 during the fall of 1992 and summer of 1993. Based on trench stratigraphy, no evidence of Holocene faulting was observed (Woodward-Clyde Federal Services, 1995). Therefore, TA-50 is in compliance with the seismic standards of 20.4.1 NMAC, Subpart IX, 270.14(b)(11)(i) and (ii), and 20.4.1 NMAC, Subpart V, 264.18(a) [6-14-00]. Figure A-5 (LANL, 2002) details regional surface faulting.

A.3.1.2 Stratigraphy

TA-50 is located in the central part of the Pajarito Plateau. A simplified stratigraphy of the TA-50 site, as well as estimated thickness of rock units, is shown on Figure A-6 (LANL, 2002).

A.3.1.3 Soils

The soils on Mesita del Buey were derived from Bandelier Tuff bedrock and formed under a semiarid climate. Soils on the mesa top are mainly thin, well-drained, sandy loams. The subsoil is a reddish-brown clay, gravelly clay, or clay loam with depth to tuff bedrock about 20 to 50 centimeters (cm) (8 to 20 inches [in.]). These soils are classified in the Unified Soil Classification System as sandy loam, sandy loam-sandy clay, loam, clay loam-loam, and clay loam.

TA-50 is a Hackroy-Rock outcrop complex and Carjo loam. The Hackroy-Rock outcrop complex consists primarily of rock outcrop and Hackroy soils. The Hackroy soils typically range from a brown, sandy loam in the top 8 cm to reddish-brown clay from 8 to 30 cm in depth. Permeability rates range from 5 to 15 centimeters per hour (cm/hr) in the top layers down to 0.15 to 0.50 cm/hr in the lower layers. The shrink-swell potential is low. Available water-holding capacity is 0.11 to 0.21 cm per cm (cm/cm), and the soil pH is 6.6 to 7.8. The Carjo soils typically range from a grayish-brown loam in the top 10 cm to a brown clay loam from 10 to 30 cm in depth. Permeability rates range from 1.5 to 5 cm/hr in the top layer, down to 0.15 to 5 cm/hr in the lower layers. The shrink-swell potential is low to moderate. Available water-holding capacity is 0.14 to 0.21 cm/cm, and the soil pH is 6.3 to 7.8 (Nyhan et al., 1978).

The slopes between TA-50 mesa top and canyon bottoms consist of steep rock outcrops and patches of shallow, undeveloped colluvial soils. The south-facing canyon walls of Pajarito Canyon are steep and have little or no soil material or vegetation, whereas the north-facing walls of Canada del Buey have areas of thin dark-colored soils. Native vegetation at TA-50 is mainly brome grass, false tarragon, blue grama, wormwood, Colorado piñon, and one-seed juniper.

A.3.1.4 Erosional Processes

Erosion of material on Mesita del Buey occurs primarily by shallow runoff on the relatively flat pans of the mesa, by deeper runoff in channels, and by rock fall and colluvial transport on the canyon walls. Wind erosion of disturbed soils also occurs. Mesita del Buey cliff-forming units are eroded primarily by lateral cliff retreat and not vertical erosion.

A.3.2 Floodplain Standard [20.4.1 NMAC, Subpart IX, 270.14(b)(11)(iii), 270.14(b)(19)(ii), and 20.4.1 NMAC, Subpart V, 264.18(b)]

The CSUs addressed in the TA-50 Part B are not located within the 100-year floodplain boundary. In accordance with 20.4.1 NMAC, Subpart IX, 270.14(b)(11)(iii) [6-14-00], additional floodplain information is provided in Appendix A of the LANL General Part B.

A.4 TOPOGRAPHIC MAPS [20.4.1 NMAC, SUBPART IX, 270.14(B)(19)]

Topographic maps and figures are provided in LANL, 2002 or referenced to meet the requirements of 20.4.1 NMAC, Subpart IX, and 270.14(b) (19) [6-14-00]. All maps clearly show the map scale, the date of preparation, and a north arrow. The maps and figures used to fulfill these regulatory requirements include the following:

- LANL-wide 100-year floodplain maps are provided as Appendix C of the “Response to Request for Supplemental Information: Technical Adequacy Review, Resource Conservation and RCRA Permit Application; General Part A, April 1998, Revision 0.0; General Part B, October 1998, Revision 1.0; Los Alamos National Laboratory, EPA ID No. NM 0890010515,” (LANL, 2001).
- A map showing surface waters, including intermittent streams, near TA-50 is included as Figure A-7 (LANL, 2002).
- Surrounding land uses are shown on Figure A-1 (LANL, 2002).
- Wind roses for TA-6, the TA directly to the west of TA-50, are shown on Figures A-8 and A-9 (LANL, 2002).
- A map showing the legal boundaries of LANL (including TA-50) is provided as Map 1 in the “Los Alamos National Laboratory General Part A Permit Application,” Revision 0.0 (LANL, 1998b), hereinafter referred to as the LANL General Part A.
- Access control features at TA-50 (e.g., fences, gates) are shown on Figure 2.3.
- A map showing supply wells, monitoring wells, test wells, springs, and surface-water sampling stations near TA-50 is included as Figure A-7 (LANL, 2002).
- The locations of buildings, hazardous and/or mixed waste management units, and loading and unloading areas at TA-50 are shown on Figure A-7 (LANL, 2002).
- A map showing National Pollutant Discharge Elimination System discharge structure locations is included in the LANL General Part A (LANL, 1998b).
- Storm, sanitary, and process sewer systems at LANL are shown on Map A-1 of the LANL General Part B (LANL, 1998a).
- Drainage control features (e.g., run-on/runoff) are shown on Figure A-11 (LANL, 2002).
- Natural surface drainages are shown on a topographic map included herein as Figure A-7 (LANL, 2002).

- Fire stations serving LANL and the County of Los Alamos are shown on Figure E-2 of Appendix E in the LANL General Part B (LANL, 1998a).
- The equipment cleanup area for LANL is located at TA-50-1. The location of TA-50-1 is shown on a map in the LANL General Part A (LANL, 1998b).

Contour lines on the topographic map are in intervals sufficient to detail natural drainage at LANL and in the vicinity of the waste management units at TA-50. As provided in 20.4.1 NMAC, Subpart IX, 270.14(b)(19) [6-14-00], LANL has submitted the maps to the New Mexico Environment Department at these scales and contour intervals due to the size of the waste management units, the extent of the LANL facility, and the topographic relief in the area.

A.5 GROUNDWATER MONITORING [20.4.1 NMAC, SUBPART IX, 270.14(C) AND 20.4.1 NMAC, SUBPART V, 264.90(A)]

Groundwater monitoring and protection requirements specified in 20.4.1 NMAC, Subpart IX, 270.14(c) and 20.4.1 NMAC, Subpart V, 264.90(a) [6-14-00], apply only to owners and operators of surface impoundments, waste piles, land treatment units, and landfills. This document addresses CSUs, which are not regulated units subject to 20.4.1 NMAC, Subpart IX, 270.14(c) [6-14-00].

A.6 OTHER PERMIT ACTIVITIES

Other types of Resource Conservation and Recovery Act permits include, but are not limited to, the following:

- Permits by Rule
- Emergency Permits
- Hazardous Waste Incinerator Permits
- Permits for Land Treatment Demonstrations Using Field Test of Laboratory Analyses
- Interim Permits for Underground Injection Control Program Wells
- Research, Development, and Demonstration Permits
- Permits for Boilers and Industrial Furnaces Burning Hazardous Waste

Currently, none of these permit types are relevant for operations at TA-50.

A.7 REFERENCES

LANL, 2002, “Los Alamos National Laboratory Technical Area 50 Part B Permit Renewal Application,” Revision 3.0, August 2002, LA-UR-02-4739, Los Alamos National Laboratory, Los Alamos, New Mexico.

LANL, 2001, “Response to Request for Supplemental Information; Technical Adequacy Review, RCRA Permit Application; General Part A, April 1998, Revision 0.0; General Part B, October 1998, Revision 1.0, Los Alamos National Laboratory, EPA ID No. NM0890010515,” Los Alamos National Laboratory, Los Alamos, New Mexico.

LANL, 1998a, “Los Alamos National Laboratory General Part B Permit Application,” Los Alamos National Laboratory, Los Alamos, New Mexico.

LANL, 1998b, “Los Alamos National Laboratory General Part A Permit Application,” Revision 0.0, Los Alamos National Laboratory, Los Alamos, New Mexico.

LANL, 1992, “Environmental Surveillance at Los Alamos During 1990,” Los Alamos National Laboratory, Los Alamos, New Mexico.

Longmire et. al., 1996, “Natural Background Geochemistry, Geomorphology, and Pedogenesis of Selected Soil Profiles and Bandelier Tuff,” LA-12913-MS, Los Alamos National Laboratory, Los Alamos, New Mexico.

Nyhan et al. (J. W. Nyhan, L. W. Hacker, T. E. Calhoun, and D. L. Young), 1978, “Soil Survey of Los Alamos County, New Mexico,” LA-6779-MS, Los Alamos National Laboratory, Los Alamos, New Mexico.

Woodward-Clyde Federal Services, 1995, “Seismic Hazards Evaluation of the Los Alamos National Laboratory,” Los Alamos, New Mexico.

TA-54

ATTACHMENT A

FACILITY DESCRIPTION

TA-54

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LIST OF ABBREVIATIONS/ACRONYMS

20.4.1 NMAC	New Mexico Administrative Code, Title 20, Chapter 4, Part 1
AASHTO	American Association of State Highway and Transportation Officials
CSU	container storage unit
JCI	Johnson Controls World Services, Inc.
LANL	Los Alamos National Laboratory
MLLW	mixed low-level waste
MTRUW	mixed transuranic waste
TA	technical area

TA-54
ATTACHMENT A
FACILITY DESCRIPTION

The information in this Attachment Section conforms with the applicable requirements of the New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20.4.1 NMAC), revised June 14, 2000 [6-14-00]. The following subject areas are addressed in this Section:

- A general description of Technical Area (TA) 54 at Los Alamos National Laboratory (LANL) [20.4.1 NMAC § 270.14(b)(1)];
- Site-specific traffic patterns, volume, and control [20.4.1 NMAC § 270.14(b)(10)];
- Site-specific location information for compliance with the seismic and floodplain standard requirements [20.4.1 NMAC § 270.14(b)(11), and 20.4.1 NMAC § 264.18(a) and (b)];
- Site-specific topographic map requirements [20.4.1 NMAC § 270.14(b)(19)];
- Site-specific groundwater monitoring and protection information [20.4.1 NMAC § 270.14(c), and 20.4.1 NMAC § 264.90(a)].

A LANL-wide facility description addressing additional regulatory requirements is provided in this Attachment's General Section.

A.1 TA-54 GENERAL DESCRIPTION [20.4.1 NMAC § 270.14(B)(1)]

TA-54 is located in the east-central portion of LANL (~~Figure A-1 of LANL, 2003~~Figure 2-8 of this Permit) on Mesita del Buey, an east-west-trending finger mesa bounded by Cañada del Buey to the north and by Pajarito Canyon to the south. Mesa-top elevations at TA-54 range from approximately 6,400 to 6,650 feet above mean sea level. TA-54 consists of several waste management areas, including Area L, Area G, and TA-54 West, and supporting offices.

The TA-54 hazardous and mixed waste management units addressed in this Attachment Section are located at Area L, Area G, and TA-54 West (Figure A-2 of LANL, 2003).

At Area L, there are two container storage units (CSU) for storage of hazardous waste and/or mixed low-level waste (MLLW). They include the aboveground CSU within the fence and the Storage Shafts CSU (Shafts 36 and 37).

At Area G, there are nine CSUs for storage of hazardous waste, MLLW, and mixed transuranic waste (MTRUW). They include the following:

- Storage Domes 229, 230, 231, and 232, and Pad 9;
- TA-54-412, Storage Dome 226, and Pad 1;
- Storage Dome 48 and Pad 3;
- Pad 10 (former Pads 2 and 4) and the transuranic waste characterization facilities;
- Storage Domes 49 and 224; Storage Sheds 144, 145, 146, 177, 1027, 1028, 1030, and 1041; and Pads 5, 8, and 7;
- Storage Domes 153 and 283, and Pad 6;
- Storage Shed 8;
- TA-54-33, and;
- Storage Dome 375 and Pad 11.

At TA-54 West, there are two CSUs for storage of MLLW and MTRUW in solid form. They include the Indoor CSU and the Outdoor CSU at TA-54-38.

Descriptions of the Area L, Area G, and TA-54 West CSUs are provided in Section 2.0 and Attachment G (LANL, 2003). The locations of these CSUs are shown on Figures 2-1, 2-3, and 2-14 in Section 2.0 (LANL, 2003).

A.2 TRAFFIC PATTERNS [20.4.1 NMAC § 270.14(B)(10)]

General traffic pattern information, traffic volumes, and traffic control signals for the LANL-wide facility are provided in the general Section A.2 of this~~this~~ Permit Attachment~~'s General Sectio~~n.

A.2.1 Routes of Travel

The primary traffic routes used to transport hazardous and mixed waste to TA-54 include Pajarito Road, Diamond Drive, and West Jemez Road (State Road 501) (see Map 1 in the most recent version of the "Los Alamos National Laboratory General Part A Permit Application" [hereinafter referred to as the LANL General Part A]). Within TA-54, waste is transported along Mesita del Buey Road to TA-54 West, Area L, or Area G (Figure A-2 of LANL, 2003).

A.2.2 Traffic Volumes

Traffic volumes on Mesita del Buey Road are generally light to moderate. A traffic study was conducted in 1993 at the intersection of Pajarito Road and Rex Drive, which immediately joins Mesita del Buey Road. Based on this study, the Pajarito Road and Rex Drive intersection had a

volume of 380 vehicles turning off of Pajarito Road between 6:30 and 9:00 in the morning (Johnson Controls World Services, Inc. [JCI], 1993). Vehicle types are generally cars, light- and medium-duty trucks, and vans. Flatbed trucks or trailers also use Mesita del Buey Road to transport waste containers.

A.2.3 Traffic Control Signals

Traffic control signals within TA-54 include stop signs, posted speed limits, caution lights, and other traffic and pedestrian control signs. The locations of existing signs at TA-54 are shown on Figure A-3 (LANL, 2003).

A.2.4 Road Surfacing and Load-Bearing Capacity

Roads within TA-54 are generally two-lane roads with asphaltic-concrete surfaces. Load-bearing capacity for these roads is 32,000 pounds per axle. These roads are typically constructed with a 6-inch-thick base overlain with a 3-inch-thick asphaltic-concrete surface. These roads were designed and constructed to meet the American Association of State Highway and Transportation Officials (AASHTO) specification HS-20 (AASHTO, 1996). In TA-54, Area G, road surfaces consist of asphaltic-concrete, graded gravel, and/or dirt.

A.3 LOCATION INFORMATION [20.4.1 NMAC § 270.14(B)(11)]

A.3.1 Seismic Standard [20.4.1 NMAC § 270.14(b)(11)(i and ii) and 20.4.1 NMAC § 264.18(a)]

The hazardous and mixed waste management units at TA-54, Areas L and G, are exempt from the seismic standards in 20.4.1 NMAC § 270.14(b)(11), and 20.4.1 NMAC § 264.18(a) [6-14-00], because these units or the interim status storage capacity existed prior to January 25, 1985, and July 25, 1990, when the State of New Mexico received hazardous and mixed waste authorization, respectively. The mixed waste management units at TA-54 West are exempt from the seismic standards in 20.4.1 NMAC § 270.14(b)(11), and 20.4.1 NMAC § 264.18(a) [6-14-00], because this unit existed prior to July 25, 1990 when the State of New Mexico received mixed waste authorization. Consistent with the criteria provided in 20.4.1 NMAC § 270.14(b)(11)(i), and 20.4.1 NMAC § 264.18(a) [6-14-00], the waste management units at TA-54 existed prior to the effective date of regulations or were approved under interim status; thus, the seismic standards are not applicable.

A.3.2 Floodplain Standard [20.4.1 NMAC §§ 270.14(b)(11)(iii through v) and 270.14(b)(19)(ii); 20.4.1 NMAC § 264.18(b)]

The hazardous and mixed waste management units at TA-54 are located on a mesa top, Mesita del Buey. In accordance with 20.4.1 NMAC § 270.14(b)(11)(iii through v) [6-14-00], the hazardous and mixed waste management units at TA-54 are not located within the 100-year floodplain boundary. Additional floodplain information is provided in Appendix A of the LANL General Part B.

A.4 TOPOGRAPHIC MAPS [20.4.1 NMAC § 270.14(B)(19)]

Topographic maps and figures are provided in LANL, 2003 or referenced to meet the requirements of 20.4.1 NMAC § 270.14(b)(19) [6-14-00]. The maps clearly show the map scale, the date of preparation, and a north arrow. The maps and figures used to fulfill these regulatory requirements include the following:

- LANL-wide 100-year floodplain maps were provided as Appendix C of the "Response to Request for Supplemental Information: Technical Adequacy Review, RCRA Permit Application; General Part A, April 1998, Revision 0.0; General Part B, October 1998, Revision 1.0; Los Alamos National Laboratory, EPA ID No. NM0890010515" (LANL, 2001).
- Maps showing surface waters, including intermittent streams, near TA-54 are included as Figures 2-1, 2-3, and 2-14 in Section 2.0 (LANL, 2003).
- Surrounding land uses are shown on ~~Map 1 in the LANL General Part A~~Figure 1-1 of this Permit.
- Wind roses for TA-54 are shown on Figures A-4 and A-5 (LANL, 2003).
- A map showing the legal boundaries of LANL (including TA-54) is provided as ~~Map A-2 in the LANL General Part B~~Figure 2-8 of this Permit.
- Access control features at TA-54 (e.g., fences, gates) are shown on Figures~~ 2-1, 2-3, and 2-14 (LANL, 2003)~~ 2-4, 2-5, and 2-6 of this Permit.
- The locations of buildings, hazardous and/or mixed waste management units and structures, and loading and unloading areas at TA-54 are shown on Figures 2-1, 2-3, and 2-14 (LANL, 2003).
- A map showing National Pollutant Discharge Elimination System discharge structure locations is included in the LANL General Part A.
- Storm, sanitary, and process sewer systems at LANL are shown on Map A-1 of the LANL General Part B.
- Drainage control features (e.g., run-on/runoff, drainage barriers) are shown on Figures 2-1, 2-3, and 2-14 (LANL, 2003).
- Fire stations serving LANL and the County of Los Alamos are shown on Figure E-2 of Appendix E in the LANL General Part B.

- The equipment cleanup area for LANL is located at TA-50-1. The location of TA-50-1 is shown on Figure 50-1 in the LANL General Part A.

Contour lines on all topographic maps are in intervals sufficient to detail natural drainage at LANL and in the vicinity of the waste management units. As provided in 20.4.1 NMAC § 270.14(b)(19) [6-14-00], LANL has submitted the maps to the New Mexico Environment Department at these scales and contour intervals due to the size of the waste management units, the extent of the LANL facility, and the topographic relief in the area.

A.5 GROUNDWATER MONITORING [20.4.1 NMAC § 270.14(C) AND 20.4.1 NMAC § 264.90(A)]

Groundwater monitoring information is provided in Appendix A of the LANL General Part B.

A.6 OTHER PERMIT ACTIVITIES

Other types of Resource Conservation and Recovery Act permits include, but are not limited to, the following;

- Permits by Rule
- Emergency Permits
- Hazardous Waste Incinerator Permits
- Permits for Land Treatment Demonstrations Using Field Test or Laboratory Analyses
- Interim Permits for Underground Injection Control Program Wells
- Research, Development, and Demonstration Permits
- Permits for Boilers and Industrial Furnaces Burning Hazardous Waste.

Currently, none of these permit types are relevant for operations at TA-54.

A.7 REFERENCES

AASHTO, 1996, "Standard Specifications for Highway Bridges," 16th Edition, American Association of State Highway and Transportation Officials.

JCI, 1993, "Conceptual Study Report for Entrances to TA-54 at Pajarito Road and Rex Drive, at New Intersection Between TA-51 and TA-54 West, and at TA-54, Area G, Dirt Road Connecting Pajarito Road to Waste Site on Top of Mesa," JCI 93-128, Johnson Controls World Services, Inc., Design Department, Los Alamos, New Mexico.

LANL, 2003, "Los Alamos National Laboratory Technical Area 54 Part B Permit Renewal Application," Revision 3.0, June 2003, LA-UR-03-3579, Los Alamos National Laboratory, Los Alamos, New Mexico

LANL, 2001, "Response to Request for Supplemental Information: Technical Adequacy Review, RCRA Permit Application: General Part A, April 1998, Revision 0.0; General Part B, October 1998, Revision 1.0; Los Alamos National Laboratory, EPA ID No. NM0890010515," LA-UR-01-6054, Los Alamos National Laboratory, Los Alamos, New Mexico.

TA-55

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FACILITY DESCRIPTION

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LIST OF ABBREVIATIONS/ACRONYMS

20.4.1 NMAC	New Mexico Administrative Code, Title 20, Chapter 4, Part 1
AASHTO	American Association of State Highway and Transportation Officials
ft	feet/foot
in.	inch(es)
LANL	Los Alamos National Laboratory
TA	Technical Area

TA-55
ATTACHMENT A
FACILITY DESCRIPTION

The information in this Attachment Section conforms with the applicable requirements of the New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20.4.1 NMAC), revised June 14, 2000 [6-14-00]. The following subject areas are addressed:

- A general description of Technical Area (TA) 55 at Los Alamos National Laboratory (LANL) [20.4.1 NMAC §270.14(b)(1)];
- Site-specific traffic patterns, volume, and control [20.4.1 NMAC §270.14(b)(10)];
- Site-specific location information for compliance with the seismic standard and floodplain requirements [20.4.1 NMAC §270.14(b)(11) and 20.4.1 NMAC §264.18(a) and (b)];
- Site-specific topographic map requirements [20.4.1 NMAC §270.14(b)(19)]; and
- Site-specific groundwater monitoring and protection information [20.4.1 NMAC §270.14(c) and 20.4.1 NMAC §264.90(a)].

A LANL-wide facility description addressing additional regulatory requirements is provided in this Attachment's General Section.

A.1 TA-55 GENERAL DESCRIPTION [20.4.1 NMAC §270.14(B)(1)]

TA-55 is located in the north central portion of LANL (Figure A-1 of LANL, 2003) on a mesa between a branch of Mortandad Canyon on the north and Two Mile Canyon on the south. Mesa-top elevations at TA-55 range from approximately 7,100 to 7,300 feet (ft) above mean sea level. The locations of the waste management units at TA-55 are shown on Figure ~~A-2 (LANL, 2003)~~2-7 of this Permit.

TA-55 began operating in 1978 and is the location of research and development activities, including a plutonium-processing facility. The waste management units at TA-55 include seven container storage units, a storage tank system, and a cementation unit. Detailed descriptions of the waste management units at TA-55 are provided in Attachments G, ~~H, and I (LANL, 2003)~~H and J of this Permit, respectively.

A.2 TRAFFIC PATTERNS [20.4.1 NMAC §270.14(B)(10)]

General traffic pattern information, traffic volumes, and traffic control signals for the LANL-wide facility are provided in general section A.2 of this Permit Attachment~~Appendix A of the LANL General Part B~~.

A.2.1 Routes of Travel

Hazardous and/or mixed waste stored and treated at TA-55 is generated at TA-3 and TA-55. Hazardous and/or mixed waste is occasionally transported from TA-55 to other areas at LANL (e.g., TA-54). The primary traffic routes that may be used to transport hazardous and mixed waste to and from TA-55 include Diamond Drive, Pajarito Road, and Pecos Drive as shown on Figure A-3 of LANL, 2003.

A.2.2 Traffic Volumes

The buildings at TA-55 are located northwest of the intersection of Pajarito Road and Pecos Drive, as shown on Figure A-4 of LANL, 2003. According to a traffic study conducted by Johnson Controls World Services, Inc. (JCI) (JCI, 1999), Pajarito Road has an average daily traffic volume of 12,000 vehicles. This includes vehicles traveling both northwest and southeast. Pecos Drive has an average daily traffic volume of 5,000 vehicles per day. This includes vehicles traveling both north and south. These values are based on a 24-hour period. Vehicle types include cars, light- and medium-duty trucks, and vans. Since the time of this study, Pajarito Road has been closed to non-LANL badge holders, reducing the average daily traffic volume.

A.2.3 Traffic Control Signals

Traffic control signals surrounding and within TA-55 include stop signs, posted speed limits, a traffic light, and other traffic and pedestrian control signs. The locations of existing traffic control signals at TA-55 are shown on Figure A-4 of LANL, 2003.

A.2.4 Road Load-Bearing Capacity

Roads within TA-55 are generally two lane roads with asphaltic-concrete surfaces. Load-bearing capacity for these roads is 32,000 pounds per axle. These roads are typically constructed with a 6-inch (in.)-thick base with a 3-in.-thick asphaltic-concrete surface. These roads were designed and constructed to meet the American Association of State Highway and Transportation Officials (AASHTO) specification HS-20 (AASHTO, 1996).

A.3 LOCATION INFORMATION [20.4.1 NMAC §270.14(B)(11)]

A.3.1 Seismic Standard [20.4.1 NMAC §270.14(b)(11)(i - ii) and 20.4.1 NMAC §264.18(a)]

General seismic information for the LANL-wide facility is provided in Appendix A of the LANL General Part B. TA-55 is in compliance with the seismic standards of 20.4.1 NMAC §270.14(b)(11) and 20.4.1 NMAC §264.18(a) [6-14-00]. A geologic field investigation, which consisted of exploratory trenching, was conducted within 3,000 ft of TA-55-4 and TA-55-185 during the fall of 1992 and summer of 1993. Based on trench stratigraphy, no evidence of Holocene faulting was observed (Woodward-Clyde Federal Services, 1995).

A.3.2 Floodplain Standard [20.4.1 NMAC §270.14(b)(11)(iii - v) and 270.14(b)(19)(ii); 20.4.1 NMAC §264.18(b)]

The hazardous and mixed waste management units at TA-55 are located on a mesa top. In accordance with 20.4.1 NMAC §270.14(b)(11)(iii) [6-14-00], the hazardous and mixed waste management units addressed in this permit application are not located within the 100-year floodplain boundary. Additional floodplain information is provided in Appendix A of the LANL General Part B.

A.4 TOPOGRAPHIC MAPS [20.4.1 NMAC §270.14(B)(19)]

Topographic maps and figures are provided in LANL, 2003 or referenced to meet the requirements of 20.4.1 NMAC §270.14(b)(19) [6-14-00]. All maps clearly show the map scale, the date of preparation, and a north arrow. The maps and figures used to fulfill these regulatory requirements include the following:

- LANL-wide 100-year floodplain maps are provided as Appendix C of the "Response to Request for Supplemental Information: Technical Adequacy Review, RCRA Permit Application; General Part A," April 1998, Revision 0.0; and "Los Alamos National Laboratory General Part B," October 1998, Revision 1.0; Los Alamos National Laboratory, EPA ID No. NM 0890010515" (LANL, 2001).
- A map showing surface waters, including intermittent streams, near TA-55 is included as Figure A-5 (LANL, 2003).
- Surrounding land uses are shown on Figure ~~A-1 of LANL, 2003~~1-1 of this Permit.
- Wind roses for TA-6, the TA directly west of TA-55, are shown on Figures A-6 and A-7 (LANL, 2003).
- A map showing the boundaries of LANL (including TA-55) is provided as Figure ~~A-2 in the LANL General Part B~~2-8 of this Permit.
- Access control features at TA-55 (e.g., fences, gates) are shown on Figure 2-7 (Permit Part 2).

- A map showing supply wells, monitoring wells, test wells, springs, and surface-water sampling stations near TA-55 is included as Figure A-5 (LANL, 2003).
- The locations of buildings, hazardous and/or mixed waste management units, and loading and unloading areas at TA-55 are shown on Figure A-5 (LANL, 2003).
- A map showing National Pollutant Discharge Elimination System discharge structure locations is included in the most recent version of the "Los Alamos National Laboratory General Part A Permit Application," herein after referred to as the LANL General Part A.
- Storm, sanitary, and process sewer systems at LANL are shown on Map A-1 of the LANL General Part B.
- Drainage control features (e.g., run-on/runoff) are shown on Figure A-9 (LANL, 2003).
- Fire stations serving LANL and the County of Los Alamos are shown on Figure E-2 of Appendix E in the LANL General Part B.
- The equipment cleanup area for LANL is located at TA-50-1. The location of TA-50-1 is shown on Figure 50-1 in the LANL General Part A.

Contour lines on the topographic map (Figure A-5 of LANL, 2003) are in intervals sufficient to detail natural drainage at LANL and in the vicinity of the waste management units at TA-55. As provided in 20.4.1 NMAC §270.14(b)(19) [6-14-00], LANL has submitted the maps to the New Mexico Environment Department at these scales and contour intervals due to the size of the waste management units, the extent of the LANL facility, and the topographic relief in the area.

A.5 GROUNDWATER MONITORING [20.4.1 NMAC, SUBPART IX, 270.14(C) AND 20.4.1 NMAC, SUBPART V, 264.90(A)]

Groundwater monitoring information is provided in Appendix A of the LANL General Part B.

A.6 OTHER PERMIT ACTIVITIES

Other types of Resource Conservation and Recovery Act permits include, but are not limited to, the following:

- Permits by Rule
- Emergency Permits
- Hazardous Waste Incinerator Permits
- Permits for Land Treatment Demonstrations Using Field Test or Laboratory Analyses
- Interim Permits for Underground Injection Control Program Wells
- Research, Development, and Demonstration Permits
- Permits for Boilers and Industrial Furnaces Burning Hazardous Waste

Currently, none of these permit types are in effect for operations at TA-55.

A.7 REFERENCES

AASHTO, 1996 and all approved updates, "Standard Specifications for Highway Bridges," 16th Edition, American Association of State Highway and Transportation Officials.

JCI, 1999, Telecon from John Bradley, Johnson Controls World Services, Inc. to Jessica Moseley, IT Corporation, on February 10, 1999, Los Alamos, New Mexico.

LANL, 2003, "Los Alamos National Laboratory Technical Area 55 Part B Permit Renewal Application," Revision 2.0, September 2003, LA-UR-03-6303, Los Alamos National Laboratory, Los Alamos, New Mexico

LANL, 2001, "Response to Request for Supplemental Information: Technical Adequacy Review, RCRA Permit Application; General Part A," April 1998, Revision 0.0; "Los Alamos National Laboratory General Part B," October 1998, Revision 1.0, Los Alamos National Laboratory, EPA ID No. NM0890010515," Los Alamos National Laboratory, Los Alamos, New Mexico.

Woodward-Clyde Federal Services, 1995, "Evaluation of the Potential for Surface Faulting at TA-63," prepared for Los Alamos National Laboratory, Los Alamos, New Mexico.

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ATTACHMENT A

GENERAL FACILITY OPERATIONS AND WASTE MANAGEMENT PRACTICES

TA-55

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LIST OF ABBREVIATIONS/ACRONYMS

20.4.1 NMAC	New Mexico Administrative Code, Title 20, Chapter 4, Part 1
CAM	continuous air monitor
CAS	Central Alarm Station
cm	centimeters
cm/hr	centimeters per hour
CSU	container storage unit
FMCS	facility motor/control system
ft	feet/foot
HEPA	high-efficiency particulate air
LACFD	Los Alamos County Fire Department
LANL	Los Alamos National Laboratory
MSDS	Material Safety Data Sheets
PA	public address
S-10	Hazardous Materials Response Group
TA	technical area

TA-55
ATACHMENT A
GENERAL FACILITY OPERATIONS AND WASTE MANAGEMENT PRACTICES

This Attachment Section provides an overview of current facility operations and waste management practices for the hazardous and mixed waste management units at Los Alamos National Laboratory (LANL) Technical Area (TA) 55.

A.1 SECURITY AND ACCESS CONTROL [20.4.1 NMAC §270.14(b)(4) and §270.14(b)(19)(viii) and 20.4.1 NMAC §264.14]

Security at TA-55 is maintained with both manmade and natural barriers. These barriers prevent the unknowing entry and minimize the possibility for unauthorized entry of persons or livestock into TA-55, and thus satisfy the requirements of the New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20.4.1 NMAC) §264.14, revised June 14, 2000 [6-14-00]. Two 12-foot (ft) high chain-link security fences with razor wire at the top surround the entire perimeter of TA-55, as shown on Figure 2-7 (Permit Part 2).

Three entry gates allow access to TA-55. One entry gate is located at the main entrance to TA-55 on the southeast side of the facility, one entry gate is located on the road to TA-48 at the northwest end of TA-55, and one entry gate is located at the northeast corner of TA-55 (for access to TA-55, Building 28 [TA-55-28] only). An entry station is located adjacent to the entry gate at the main entrance to the facility. The entry station is manned 24 hours a day by security personnel. Unescorted access to TA-55 is granted only to persons possessing appropriate security clearance and meeting specific training requirements.

TA-55 is patrolled by security personnel during both operational and non-operational hours to ensure that the gates are locked and that unauthorized entry has not occurred. The entire length of both security fences is also inspected several times each day by on-site security personnel. In accordance with 20.4.1 NMAC §270.14(b)(19)(viii) [6-14-00], the locations of the security fences, entry gates, and entry stations are shown on Figure 2-7 (Permit Part 2). In addition to the fence and entry gates, cliffs and canyons surrounding TA-55 provide natural barriers to discourage unauthorized entry.

Warning signs are posted on the perimeter fences at approximately 40 to 110-ft intervals and can be seen from any approach to TA-55. Warning signs are also posted at each access to the

waste management units in sufficient numbers to be seen from any approach. The legends on the signs are bilingual (i.e., English and Spanish) and indicate "No Trespassing by Order of the United States Department of Energy." The signs are legible from a distance of 25 ft. The only exceptions are in confined areas where space is limited. Signs for confined areas may be reduced in size, but are legible to personnel who require access to these areas.

A.2 PREPAREDNESS AND PREVENTION [20.4.1 NMAC, SUBPART V, PART 264, SUBPART C]

The following sections present how operations at TA-55 comply with the preparedness and prevention requirements of 20.4.1 NMAC, Subpart V, Part 264, Subpart C [6-14-00]. Additional information on the communication and alarm equipment available at LANL is presented in Appendix E of the most recent version of the "Los Alamos National Laboratory General Part B Permit Application," hereinafter referred to as the LANL General Part B. A list of the emergency equipment available for use at the hazardous and mixed waste management units at TA-55 is provided in Tables D-1 through D-4 of Attachment D (*Contingency Plan*) and in Table E-2 of the LANL General Part B. A videotape explaining the alarms and evacuation procedures at TA-55 must be viewed by new visitors prior to entering TA-55.

A.2.1 Required Equipment [20.4.1 NMAC §264.32]

Buildings at TA-55 are equipped with multiple audible and visual safety-alarm systems to alert personnel in the event of an emergency and to evacuate the area. These alarm systems are located both inside and outside buildings at TA-55 and are monitored and controlled by the facility monitor/control system (FMCS). The FMCS is in operation 24 hours a day and is located in the Operations Center at TA-55-4 with access through TA-55-3. Specific FMCS alarm systems at TA-55 are discussed below.

A TA-55 computer system monitors the smoke and heat sensors, fire-alarm pull boxes, and drop box push-button alarms located throughout TA-55. Fire-alarm pull boxes and/or drop box push-button alarms are located in the vicinity of the waste management units addressed in this permit application. Fire-alarm pull boxes may be used by personnel to activate a local fire alarm when a fire or other emergency is discovered. Fire-alarm pull boxes are located in TA-55-4, Room 401, and throughout the basement in the vicinity of the container storage units (CSU), storage tank system, and cementation unit. A fire-alarm pull box is readily available at TA-55-185 and on the outer west side of TA-55-4 (for personnel working at the container storage pad).

Once manually activated, an alarm (a steady high-pitched tone) sounds in the TA-55-4 Operations Center and at the Los Alamos County Fire Department (LACFD). Automatic thermal alarms are also located in active gloveboxes at TA-55-4.

Buildings at TA-55 are equipped with fire-suppression alarm systems and/or smoke detectors. The fire-suppression alarms are activated when water flow is detected in the sprinkler pipes of the fire-suppression system. The smoke detectors, once activated, also sound an alarm. Both types of alarms are area-specific and sound only in the affected area. Red lights are mounted both inside and outside of rooms and at strategic locations throughout TA-55. Upon activation of the fire-alarm system, the alarm sounds and the red lights flash to alert personnel of emergency conditions. All fire-alarm pull boxes, heat and smoke detection systems, and automatic fire-suppression systems at TA-55 are connected to the LACFD through LANL's Central Alarm Station (CAS).

A general evacuation alarm (a loud mid-range pulsating tone) is activated by gamma sensors on the ceilings of rooms on the first floor of TA-55-4 and in other areas of the basement. This evacuation alarm sounds throughout TA-55 and serves to alert personnel to evacuate. It may also be activated by the TA-55-4 Operations Center for other emergencies requiring evacuation.

Continuous air monitors (CAM) are located at various locations throughout TA-55. CAMs will be used as additional leak detection for the waste management units addressed in this permit application by detecting any airborne alpha contamination that would be present if a spill or leak of mixed waste were to occur.

TA-55-4 is also equipped with a ventilation alarm system designed to monitor air pressure and ambient air for personnel working in areas where hazardous or mixed waste is managed. The ventilation system creates zones within TA-55-4 which are at a lower pressure than the outside air. Air flows from the zones of highest pressure to the zones of lowest pressure (highest potential contamination areas). The airflow through the different zones is carefully balanced and controlled to provide the greatest protection to personnel as well as to the environment. If negative air pressure exceeds designated limits, a ventilation alarm (a slow, repeating chime sound) is activated.

In addition to the alarms described above, the public address (PA) system may also be used to announce an evacuation at TA-55. The PA system can be heard throughout TA-55 and is activated by the TA-55-4 Operations Center.

TA-55 is equipped with both local paging and conventional telephones to provide adequate communication and to summon external emergency assistance, if necessary. Local paging telephones and speakers and/or conventional telephones are located at or near the hazardous and mixed waste management units addressed in this permit application. Local paging telephones are used to page on-site personnel within the local paging area and may be used in the event of an emergency to communicate the location and nature of hazardous conditions to personnel in the area. The general evacuation alarm system at TA-55 is interrupted when the TA-55 PA system is activated through the TA-55-4 Operations Center. Personnel working at any of the waste management units at TA-55 may also use conventional telephones to call the Operations Center to summon emergency assistance from ~~the Hazardous Materials Response Group (S-10)~~Emergency Management and Response personnel, local police and fire departments, and state emergency response teams, if necessary.

Fire control equipment is readily available for the waste management units addressed in this permit application. Depending on the size of the fire and the fuel source, portable fire extinguishers may be used by on-site personnel. However, LANL policy encourages immediate evacuation of the area and notification of appropriate emergency personnel. All buildings at TA-55 are equipped with heat and smoke detection systems and/or automatic, heat-activated fire-suppression systems to aid in the timely response in the event of fires in these buildings.

Fire hydrants are located on the north, south, and west sides of TA-55-4. Water is supplied to the fire hydrants by a municipal water system which provides adequate volume and pressure (i.e., greater than 1,000 gallons per minute and 90 pounds per square inch static pressure) to multiple water hoses in the event of a fire. The LACFD will supply all water hoses needed in the event of a fire at TA-55.

Spill control at TA-55-4, Room 401, and the Vault is provided by recessed floors. Self-containment pallets or cabinets provide spill control at the B40 and K13 CSUs. Additional spill control equipment is available, as needed, from Emergency Management and Response personnel~~S-10~~.

Decontamination equipment is available at TA-55 for personnel working at any of the waste management units included in this permit application. The equipment includes portable eyewash stations and safety showers. Eyewash stations and safety showers are located in Room 401 and throughout the basement of TA-55-4. Eyewash stations are also located on the Container Storage Pad and outside on the south side of TA-55-4 near TA-55-185. TA-55-185 will be equipped with an eyewash station prior to wastes being managed there. Safety showers are readily available in the following locations: TA-55-4, Room 401; in the basement of TA-55-4; on the Container Storage Pad; and outside on the south side of TA-55-4. TA-55-185 will be equipped with a portable safety shower prior to wastes being managed there. Additional decontamination equipment may be provided by S-10 personnel. Material Safety Data Sheets (MSDS) provide useful exposure information and are available in Room 401 and in the basement of TA-55-4. MSDSs will also be located in TA-55-185 prior to wastes being managed there.

A.2.2 Testing and Maintenance of Equipment [20.4.1 NMAC §264.33]

All TA-55 communications and alarm systems, fire protection, and decontamination equipment are inspected, tested, and/or maintained as provided in Attachment D of this document. The frequency of inspection is adequate to ensure proper operation in the event of an emergency. Repair and replacement of emergency equipment are performed as required.

A.2.3 Access to Communications or Alarm Systems [20.4.1 NMAC §264.34]

Whenever waste is being handled at any of the TA-55 waste management units addressed in this permit application, all personnel involved have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another individual. In the event of an emergency, communication equipment at TA-55 allows personnel to contact the TA-55-4 Operations Center, the operating group management, ~~S-10~~ Emergency Management and Response personnel, and/or the CAS operator. In addition to communications and alarm systems, TA-55 personnel may carry pagers so that they can be contacted by TA-55 and other LANL emergency support personnel at all times.

A.2.4 Aisle Space Requirements [20.4.1 NMAC §264.35]

Waste containers in the TA-55 CSUs are arranged in rows with a minimum aisle space of 24 inches. Storage configuration within a row depends upon the type of container, its size, and its weight restrictions. Fifty-five-gallon drums and standard waste boxes are arranged in rows and

may be stacked to a maximum of ten ft high. The 85-gallon drums are not stacked. Large waste boxes may also be stacked to a maximum of two high, unless size and weight restrictions prohibit stacking due to safety concerns.

A.2.5 Support Agreements with Outside Agencies [20.4.1 NMAC §264.37(a)]

LANL maintains support agreements with outside agencies for emergency response assistance. Information regarding these support agreements is provided in Section 2.1.2.4 of the LANL General Part B.

A.3 HAZARDS PREVENTION [20.4.1 NMAC, SUBPART V, PART 264, SUBPART C; 20.4.1 NMAC §270.14(B)(8)]

A description of the preventive procedures, structures, and equipment at TA-55 is presented below. This information is provided in accordance with the requirements of 20.4.1 NMAC, Subpart V, Part 264, Subpart C, and 20.4.1 NMAC §270.14(b)(8) [6-14-00]. Adherence to the procedures and proper use of the structures and equipment will help to prevent hazards, undue exposure of personnel to hazardous and mixed waste, and releases to the environment.

A.3.1 Preventing Hazards in Unloading [20.4.1 NMAC §270.14(b)(8)(i)]

Flatbed trucks, trailers, forklifts, or other appropriate vehicles may be used to transport waste containers to and from the waste management units at TA-55. Forklift operators may use a boom, if necessary, to improve handling capabilities. Small containers may be handled manually or with a dolly. The use of proper handling equipment, appropriate to a container's size and weight, helps to prevent hazards while moving containers.

A.3.2 Preventing Run-On/Runoff [20.4.1 NMAC §270.14(b)(8)(ii)]

Runoff from the waste management units at TA-55 to other areas of the facility or to the environment is and will be prevented. Secondary containment is provided at each waste management unit included in this permit application where potential liquid-bearing containers are stored. Self-containment systems will be utilized at each CSU, as needed, and will be sufficient to contain at least 10 percent of the volume of potential liquid-bearing containers or the volume of the largest container, whichever is greater, pursuant to the requirements of 20.4.1 NMAC §264.175(b)(3) [6-14-00]. TA-55-4, Room 401 serves as secondary containment for the storage tank system and the cementation unit. The storage tank system and the cementation unit will have adequate secondary containment as required in 20.4.1 NMAC §264.193 [6-14-00]. Runoff control of liquids resulting from fire-suppression activities and from leaks or spills will be

accomplished by using a vacuum truck, a portable pump, a high-efficiency particulate air (HEPA) vacuum, and/or sorbents, depending on the volume and location of accumulated liquid. Accumulated liquids will be removed as soon as possible.

Run-on (e.g., sheet flooding) to any of the TA-55 waste management units addressed in this permit application is and will be prevented. With the exception of the Container Storage Pad, all of the CSUs are located indoors. The container storage pad is sloped, is elevated 2 to 4 inches above ground level, and has a culvert located beneath the pad running from the northwest side to the southeast corner to provide drainage and direct potential run-on away from the pad. In addition, containers stored on the pad are covered. Pursuant to the requirements of 20.4.1 NMAC §270.14(b)(19)(xi) [6-14-00], contours and surface drainage around the Container Storage Pad, TA-55-4, and TA-55-185 are shown on Figure A-9 in Attachment A (LANL, 2003). These features will prevent run-on to the waste management units at TA-55.

A.3.3 Preventing Water Supply Contamination [20.4.1 NMAC §270.14(b)(8)(iii)]

The waste management units at TA-55 are located, designed, constructed, operated, and maintained in a manner that will ensure the prevention of water supply contamination. Each unit is either located inside a building or provided with secondary containment. In the event of a release, the materials in question will be removed as quickly as possible and packaged in an appropriate container. Given these conditions, there is little or no potential for deposition or migration of waste constituents into the groundwater or other water supplies as a result of waste-handling operations at TA-55. In addition, the depth to groundwater at TA-55 is approximately 1,200 ft (LANL, 1998) and the average annual precipitation in the Los Alamos area (including both rain and water equivalent or frozen precipitation) is 48 centimeters (cm). The evaporation of freestanding water exceeds the annual precipitation. Permeability rates for soils at TA-55 range from 1.5 to 5.0 cm per hour (cm/hr) in the top layers to 0.15 to 5.0 cm/hr in the lower layers. Available water-holding capacity ranges from 0.14 to 0.21 percent (Nyhan et al., 1978). Collectively, the depth to the regional aquifer and the annual moisture deficit significantly limit the potential for contaminants to migrate to the groundwater in the unlikely event that contaminants reach the ground surface surrounding TA-55. In addition, all water supply lines are under pressure and are equipped with backflow prevention devices. Pursuant to the requirements of 20.4.1 NMAC §270.14(b)(8)(iii) [6-14-00], no impact to water supplies is expected.

A.3.4 Mitigating Effects of Power Outages [20.4.1 NMAC §270.14(b)(8)(iv)]

Electrical power is supplied to operate ventilation systems, the PA system, various instruments, and other electrical equipment at TA-55. In the event of a power failure, portable generators are available from the Facility and Waste Operations Division support office and at TA-55-3. These generators may be used as temporary power sources at any of the waste management units within TA-55. Evacuation alarms located throughout TA-55 are equipped with a battery back up and will continue to operate for eight hours during a power failure. Operations at any of the waste management units would be discontinued temporarily if electrical power was not restored quickly or if container-handling equipment failed. Neither a power nor an equipment failure would affect containment at any of the waste management units at TA-55.

A.3.5 Preventing Undue Exposure [20.4.1 NMAC §270.14(b)(8)(v)]

To prevent undue exposure of personnel to hazardous or mixed waste, personal protective equipment appropriate for the waste being handled is worn by all on-site personnel at TA-55 involved in waste management activities at any of the waste management units. Workers involved in waste handling at TA-55 are required to wear protective work uniforms and steel-toed/composite-toed shoes, as appropriate. Hard hats and gloves may also be worn while equipment is being operated and when containers are being loaded or unloaded.

A.3.6 Preventing Releases to the Atmosphere [20.4.1 NMAC §270.14(b)(8)(vi)]

Releases to the atmosphere are not anticipated from any of the TA-55 waste management units addressed in this permit application. Containers are kept closed during handling and storage except when, upon inspection, it is determined that containers need to be overpacked or the contents repackaged in new containers or when it is necessary to add or remove waste. Inspections are conducted to ensure the integrity of all stored containers. The cementation unit, located in TA-55-4, Room 401, is operated within a vacuum-pressured glovebox equipped with HEPA filters. This system prevents the release of any airborne contaminants from TA-55. The ventilation alarm system and/or other air monitoring equipment are located in the vicinity of the waste management units located in TA-55-4. In the event of an unexpected release, all personnel working within or near the area would be notified immediately to evacuate.

A.4 RECORDKEEPING REQUIREMENTS

Recordkeeping requirements applicable to the TA-55 CSUs, the storage tank system, and the cementation unit consist of the biennial report, unmanifested waste report, and additional reports. These reports are discussed in Section 2.6 of the LANL General Part B.

A.5 REFERENCES

LANL, 1998, "Hydrogeologic Workplan," Revision 0.0, Los Alamos National Laboratory, Los Alamos, New Mexico.

LANL, 2003, "Los Alamos National Laboratory Technical Area 55 Part B Permit Renewal Application," Revision 2.0, September 2003, LA-UR-03-6303, Los Alamos National Laboratory, Los Alamos, New Mexico

Nyhan, J.W., L.W. Hacker, T.E. Calhoun, and D.L. Young, 1978, "Soil Survey of Los Alamos County, New Mexico," LA-G779-MS, Los Alamos National Laboratory, Los Alamos, New Mexico.

Appendix G

Permit Attachment C- Waste Analysis Plan with Editing Marks

ATTACHMENT C

WASTE ANALYSIS PLAN

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LIST OF ABBREVIATIONS/ACRONYMS

20.4.1 NMAC	New Mexico Administrative Code, Title 20, Chapter 4, Part 1
AK	acceptable knowledge
ALARA	as low as reasonably achievable
ASTM	American Society for Testing and Materials
CFR	Code of Federal Regulations
D&D	decontamination and decommissioning
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
ER	environmental restoration
FFCO	Federal Facilities Compliance Order
FR	*Federal Register*
FWO-SWO	Facilities and Waste Operations-Solid Waste Operations Group
HE	high explosives
HEPA	high-efficiency particulate air
LANL	Los Alamos National Laboratory
LDR	land disposal restrictions
LIG	Laboratory Implementation Guidance
LIR	Laboratory Implementation Requirement
MLLW	mixed low-level waste(s)
MTRUW	mixed transuranic waste(s)
NCR	non-conformance report
NMED	New Mexico Environment Department
OB	open burning
OD	open detonation
ppmw	parts per million by weight
QA	quality assurance

QAPjP	"Los Alamos National Laboratory Transuranic Waste Quality Assurance Project Plan"
QC	quality control
R&D	research and development
RCRA	Resource Conservation and Recovery Act
RTL	regulatory threshold limit
RTR	real-time radiography
SOP	standard operating procedure
SVOC	semivolatile organic compound
STP	Site Treatment Plan
SW-846	EPA's "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods"
TA	technical area
TC	toxicity characteristic
TCLP	Toxicity Characteristic Leaching Procedure
TRU	transuranic
TSDF	treatment, storage, and disposal facility
UHC	underlying hazardous constituents
VOC	volatile organic compound
WAC	waste acceptance criteria
WAP	waste analysis plan
WCSF	Waste Characterization Strategy Form
WIPP	Waste Isolation Pilot Plant
WIPP WAC	"Waste Acceptance Criteria for the Waste Isolation Pilot Plant"
WMC	Waste Matrix Code(s)

ATTACHMENT C
WASTE ANALYSIS PLAN

This Waste Analysis Plan (WAP) presents information on and describes the sampling and characterization procedures used to determine the chemical and physical nature of hazardous waste, the hazardous component of mixed low-level waste (MLLW), the hazardous component of mixed transuranic waste (MTRUW), and high explosives (HE) and HE-contaminated waste stored and treated at Los Alamos National Laboratory (LANL). It meets the requirements set forth in the New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20.4.1 NMAC) § 264.13, revised June 14, 2000 [6-14-00]. The waste analysis information contained in this WAP is used for characterization of wastes managed in containers and tanks, and to support treatment by open burning (OB), open detonation (OD), and cementation processes. Additional waste analysis regulatory requirements are specified in 20.4.1 NMAC § 270.14(b), and 20.4.1 NMAC § 268.7 [6-14-00]. Additional waste analysis permit requirements are specified at Permit Section 2.4. The content of this WAP follows the guidance provided in "Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Wastes, A Guidance Manual" (U.S. Environmental Protection Agency [EPA], 1994). It is organized as follows:

Section C.1 Facility Description: Includes a general description of LANL; general descriptions of the waste streams stored and treated and the activities that generate waste.

Section C.2 Waste Analysis Parameters: Includes a discussion of the proposed analytical parameters and methods used by LANL and the criteria/rationale for the parameter selection.

Section C.3 Characterization Procedures: Includes the characterization approach (e.g., acceptable knowledge, sampling and analysis) for each waste classification stored and treated at LANL.

Section C.4 Off-Site Waste: Includes a discussion of procedures in place for acceptance of waste from off-site facilities.

Section C.5 Special Procedural Requirements: Includes a discussion of the procedures in place for ignitable, reactive, and incompatible wastes; procedures to ensure compliance with land disposal restrictions (LDR); and procedures to ensure compliance with Subpart CC requirements.

Section C.6 References.

Table C-1 summarizes applicable regulatory requirements and the corresponding location where the requirement is addressed in this appendix.

Throughout this document, generator waste characterization is described as the preliminary source of information at LANL determining the identification and subsequent management of the waste. The information presented in this Attachment is intended to discuss how the waste characterization data are reviewed and used by LANL waste management units and organizations in compliance with the 20.4.1 NMAC, Subpart V, Part 264, and 20.4.1 NMAC, Subpart VIII, Part 268, regulatory requirements.

C.1 FACILITY DESCRIPTION [20.4.1 NMAC § 270.14(b)(1)]

LANL is located in Los Alamos County in north-central New Mexico. It is approximately 60 miles north-northeast of Albuquerque and 25 miles northwest of Santa Fe. LANL and the associated residential and commercial areas of Los Alamos County are situated on the Pajarito Plateau. A detailed description of the LANL facility is included in Appendix A of this General Part B Permit Renewal Application.

LANL's central mission is the reduction of global nuclear danger supported by research that also contributes to conventional defense, civilian, and industrial needs. This includes programs in nuclear, medium energy, and space physics; hydrodynamics; conventional explosives; chemistry; metallurgy; radiochemistry; space nuclear systems; controlled thermonuclear fusion; laser research; environmental technology; geothermal, solar, and fossil energy research; nuclear safeguards; biomedicine, health, and biotechnology; and industrial partnerships. LANL is owned by the U.S. Department of Energy (DOE) and is operated jointly by DOE and Los Alamos National Security, LLS.

C.1.1 Facility Waste-Generating Processes and Activities

Wastes are generated at LANL primarily from research and development (R&D) activities, processing and recovery operations, decontamination and decommissioning (D&D) projects, and environmental restoration (ER) activities. Wastes generated from these types of processes and activities may also be received from off-site facilities, as described in Supplement 1 of the General Part B Permit Renewal Application (LANL, 2003). Tables C-2 through C-7 present information on hazardous wastes, MLLW, MTRUW, HE wastes, and HE-contaminated wastes

potentially generated at LANL. Wastes generated at off-site facilities that may be received at LANL are described in Table C-8. These tables include brief waste descriptions, waste-generating process or activity, the characterization basis for waste designation, potential EPA Hazardous Waste Number(s), the hazardous constituent(s) listed in Appendix VIII of 20.4.1 NMAC, Subpart V, and/or the characteristic(s) defined at 20.4.1 NMAC, Subpart V, Part 264, Subpart C, that make the waste hazardous, and the regulatory limits, as appropriate. These tables are provided for information purposes only.

C.1.2 Stored Waste

Hazardous waste, MLLW, and MTRUW are stored at various container storage units throughout LANL. The following sections contain general descriptions of these wastes and the processes that generate them.

C.1.2.1 Hazardous Waste

The criteria for establishing a waste as a hazardous waste are provided in 20.4.1 NMAC, Subpart II [6-14-00]. A waste is considered hazardous if it meets the definition of a solid waste described in 20.4.1 NMAC § 261.2 [6-14-00]; is not exempted from regulation as a hazardous waste under 20.4.1 NMAC § 261.4 [6-14-00]; and exhibits any of the characteristics of hazardous waste identified in 20.4.1 NMAC, Subpart II, Part 261, Subpart C, or is listed in 20.4.1 NMAC, Subpart II, Part 261, Subpart D [6-14-00].

Hazardous wastes are generated at LANL primarily from R&D activities, general facility operations, D&D projects, and ER activities. These waste streams include spent solvents, contaminated solid wastes, paint and related wastes, photographic and photocopier wastes, corrosive liquids, solid metals and metallic compounds, contaminated non-corrosive aqueous and non-aqueous solutions and sludges, mercury wastes, used batteries and battery fluids, unused off-specification commercial chemical products, gas cylinder waste, ER soils and sludges, ER aqueous liquids, and ER debris. Hazardous waste streams may be of uniform physical composition (i.e., homogeneous) or of dissimilar/diverse composition (i.e., heterogeneous). Homogeneous waste is defined as waste that contains only one material or substance or waste that has its components mixed so that consistent samples can be drawn throughout. Homogeneous waste streams can be either solids or liquids. Heterogeneous waste is defined as waste that contains multiple components that are separate because of density or specific gravity, are located in different places within the mixture, or are discrete and

different articles. Heterogeneous wastes (e.g., debris) do not lend themselves to representative sampling and analysis. Descriptions of these routinely handled hazardous waste streams and their waste-generating processes are provided below and summarized in Table C-2.

Spent Solvents

This waste stream consists of spent solvents and spent solvent mixtures that may contain organic or inorganic compounds, heavy metals, oils, and other contaminants. Waste-generating activities include R&D, laser research, organic and inorganic chemistry research, cleaning, and degreasing.

Contaminated Solid Wastes

Contaminated solid wastes (i.e., wastes of a solid physical form) include mixtures of rags, spill cleanup materials, Kimwipes™, gloves, filters, plastic and paper products, and personal protective equipment. This waste stream may also consist of disposable equipment contaminated with organic or inorganic compounds, heavy metals, oils, and other contaminants. Waste-generating activities include machining operations, chemistry research, D&D projects, metal finishing operations, and general maintenance operations.

Paint and Related Wastes

Paint and paint-related wastes consist of excess paint, paint strippers/thinners, and sludges of paints and thinners. Possible contaminants include heavy metals used as paint pigments and solvents contained in thinners and lacquers. Waste-generating activities include painting and finishing operations and general facility maintenance.

Photographic and Photocopier Wastes

Photographic wastes include spent or excess film developers, fixer solutions, and bleach solutions that may be contaminated with heavy metals. Photocopier wastes include kerosene-based toners and dispersants. This waste stream is generated from photographic film processing and photocopier operations.

Corrosive Liquid Wastes

These wastes consist of acidic or alkaline solutions that may contain organics, inorganics, metals, oils, and other contaminants. Waste-generating activities include analytical chemistry research, electro-etching, and electro-polishing.

Solid Metals and Metallic Compounds

This waste stream consists of metal chips and turnings from machining and cutting operations. It also consists of metal powders; metal salts; metal sheets; reactive metals used in synthesis reactions; solders from electronic manufacturing, repair, and brazing operations; and grinding operations. Other solid metals and metallic compounds include lead shot, bricks, plate, and shielding.

Contaminated Non-corrosive Aqueous and Non-aqueous Solutions and Sludges

This waste stream consists of non-corrosive aqueous and non-aqueous solutions and sludges that are contaminated with hazardous wastes or hazardous residues. Waste-generating activities include vacuum pump maintenance, analytical spectrometry, equipment cleaning and maintenance, vehicle maintenance, synthesis reactions, metal-polishing operations, and chemical research.

Mercury Wastes

Mercury wastes include free elemental mercury, mercuric compounds, articles and instruments containing mercury, fluorescent light fixtures, and gels containing mercuric compounds. Waste-generating activities include lamp replacement, chemical research, mercury spill cleanup, and equipment cleaning and maintenance.

Used Batteries and Battery Fluids

This waste stream consists of used batteries and battery fluids that contain heavy metals such as cadmium, lead, mercury, and silver. Waste-generating activities include routine equipment maintenance.

Unused/Off-specification Commercial Chemical Products

This waste stream consists of discarded solid and liquid chemical reagents that are off-specification, unused, or outdated. This waste stream also includes spill residues and containers containing original product residues that are unused.

Gas Cylinder Waste

This waste stream consists of pressurized gas cylinders, including aerosol cans, which may contain regulated hazardous metals, organic compounds, or exhibit the hazardous characteristics of ignitability, corrosivity, and reactivity.

ER Soils and Sludges

This waste stream consists of environmental media and sludges generated through ER activities, including site decommissioning, site characterization, and site remediation. Waste-generating activities include septic tank and detention basin closure, removal actions, and other remedial actions and site closures.

ER Aqueous Liquids

This waste stream consists of liquids generated during ER activities, including decontamination of remedial equipment, drilling fluids and well development fluids, septic tank liquids, and contaminated stormwater runoff.

ER Debris

This waste stream consists of debris (such as concrete, vitrified clay pipe, steel baffles, and building materials) generated through ER activities, including site decommissioning, site characterization, and site remediation. Waste-generating activities include septic tank and detention basin closure, removal actions, and other remedial actions and site closures.

C.1.2.2 Mixed Low-Level Waste

Low-level waste is defined in DOE Order 435.1, “Radioactive Waste Management” (DOE, 1999), as “Radioactive waste that is not classified as high-level waste, spent nuclear fuel, transuranic waste, by-product material [as defined in Section 11(e)(2) of the *Atomic Energy Act,* as amended], or naturally occurring radioactive material”. MLLW is any waste that has both a hazardous waste component and a low-level waste component, as defined above. For MLLW, this WAP addresses only the hazardous component.

MLLW is generated at LANL primarily from R&D activities, processing and recovery operations, D&D projects, and ER activities. MLLW streams may be homogeneous or heterogeneous, as defined in Section C.1.2.1. Descriptions of the MLLW and their waste-generating processes are provided below and summarized in Table C-3. These descriptions are extracted primarily from LANL's “Report for the Characterization Review of Low-Level Mixed Waste” (LANL, 1995a) and “Federal Facilities Compliance Order Site Treatment Plan Background Volume” (LANL, 1995b).

Soils with Heavy Metals

Soil waste contaminated with heavy metals is generated during D&D and ER activities at various locations throughout LANL. This waste consists of soils contaminated with varying concentrations of lead or other heavy metals.

Environmental Restoration Soils

This waste consists of soils contaminated with heavy metals and organic compounds. They are generated by ER activities, such as the remediation of release sites and D&D activities.

Inorganic Solid Oxidizers

Discarded reagent powders and crystalline materials comprise this waste stream. Most of these items are in the original manufacturer's containers, some of which may be hydrated. Many of these containers are unopened but are suspected to have radioactive surface contamination. Waste-generating activities include D&D of research laboratories and R&D.

Lead Waste

Lead waste consists of contaminated and activated lead shielding used as radiation shielding, inseparable lead, lead blankets, and lead requiring sorting. It is generated primarily from radioisotope experiments and other reactor, accelerator, laser, and x-ray activities. The lead may be in the form of sheets, pigs, bricks, shot, shavings, slag, dross, and other shapes. Radioactive contamination on the surface of the lead may be removable and the lead can then be recycled or reused.

Noncombustible Debris

Noncombustible debris consists of discarded hazardous and contaminated scrap metals that are generated by maintenance, D&D of research laboratories or equipment, R&D, and ER activities. Additionally, discarded bricks and glass are generated through dismantling of LANL buildings, including plating shops and machine sheds. The waste may be considered hazardous due to the metal content or by virtue of contamination during use.

Combustible Debris

Maintenance, D&D, R&D, and ER activities generate rags and combustible debris with heavy metals and/or organics, some of which contain residual liquids. Examples include solvents and lubricants that are used in metal-cutting operations. Much of this waste is generated during the processing of lead and barium, resulting in heavy metal contamination.

Organic-Contaminated Noncombustible Solids

This waste stream includes absorbed oils, laboratory trash, and discarded equipment. Absorbed oil waste is comprised of drums containing vermiculite or other inorganic sorbents used to absorb oil from spills and routine maintenance operations. Some of the oil originates from vacuum pumps and may be contaminated by mercury, lead, or cadmium.

Laboratory trash consists of noncombustible solid materials with residual solvent contamination. The laboratory debris includes reagent bottles, broken glassware, and disposable lab ware. Large quantities of chemicals are not placed in this trash; however, residual liquids or powders may have remained on some of the discarded material.

Discarded equipment with heavy metals and solvents primarily includes equipment and broken glassware that may have contained residual solvents.

Organic-Contaminated Combustible Solids

This waste stream consists of waste similar to combustible debris waste, along with rags, cardboard, protective clothing, and paint-stripper trash. This waste stream is potentially contaminated with methyl ethyl ketone and other solvents. Waste-generating activities include maintenance, D&D, and ER activities.

Water-Reactive Wastes

Water-reactive wastes consist of reactive metal debris generated through the cleanup of HE firing-site debris and from machining and disassembly of test components. This waste stream includes calcium, lithium hydride, lithium metal, and magnesium.

Mercury Wastes

The mercury-contaminated instruments and equipment waste stream consists of discarded or broken equipment containing liquid mercury. The instruments and equipment include broken thermometers, vacuum tubes, vacuum pumps with residual mercury, activated or contaminated

fluorescent light bulbs, and mercury absorbed into a paper or solid matrix. Most of this waste is generated by cleanup operations and could not effectively be recycled or separated from its containing vessel.

Unused Solid Reagent Chemical Wastes

Many different types of discardable off-specification unused solid reagent chemical wastes are generated at LANL by R&D programs. Most of these items are in their original containers.

Spent Solvents and Contaminated Solvent Mixtures

This waste stream is comprised of spent solvents and spent solvent mixtures that contain organic or inorganic compounds, heavy metals, oils, and/or other contaminants. Waste-generating activities include a wide variety of maintenance, cleaning and degreasing, R&D, and processing operations, such as extraction, bench-scale experimental inorganic chemistry, environmental analysis, and radiochemistry.

Corrosive Liquid Wastes

This waste stream consists of acidic or alkaline solutions that contain organics, inorganics, metals, oils, and/or other contaminants. Waste-generating activities include radiochemistry research, plutonium processing, and analytical chemistry.

Aqueous and Non-aqueous Liquids Contaminated with Heavy Metals and/or Organics

This waste stream consists of aqueous and non-aqueous solutions that contain heavy metals and/or organics. Waste-generating activities include metal-polishing operations, radiochemistry research, and ER activities.

Oil Wastes

Oil wastes at LANL are generated during equipment maintenance operations. Possible contaminants in this waste stream include heavy metals and solvents.

Unused Liquid Reagent Chemical Wastes

Many different types of discarded off-specification unused liquid reagent chemical wastes are generated at LANL by R&D programs. Most of these items are in their original containers.

Gas Cylinder Waste

This waste stream consists of pressurized gas cylinders, including aerosol cans, which contain regulated hazardous metals, organic compounds, or exhibit the hazardous characteristics of ignitability, corrosivity, and reactivity.

C.1.2.3 Mixed Transuranic Waste

Transuranic (TRU) waste is defined in DOE Order 435.1, "Radioactive Waste Management" (DOE, 1999), as follows: "Radioactive waste containing more than 100 nanocuries (3700 becquerels) per gram of waste, with half-lives greater than 20 years." Transuranic isotopes are those with atomic numbers greater than 92. MTRUW contains both a hazardous waste component and a TRU waste component. For MTRUW, this WAP addresses only the hazardous component. The system of MTRUW stream descriptions presented below is consistent with the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit. This information may be superseded by any changes to the "Waste Acceptance Criteria for the Waste Isolation Pilot Plant" (WIPP WAC).

MTRUW is generated at LANL primarily from R&D activities, processing and recovery operations, and D&D projects. Limited quantities of MTRUW from off-site facilities will be accepted at LANL for additional characterization and management. MTRUW streams at LANL include four broad categories that can be described by a Summary Category Group, which is further subdivided into Waste Matrix Codes. Summary Category Groups are used to define waste characterization groupings for the "Federal Facility Compliance Order (Los Alamos National Laboratory)" (New Mexico Environment Department [NMED], 1995) requirements and are based on the physical and chemical forms of the waste. Complete descriptions of the Summary Category Groups are available in "DOE Waste Treatability Groups Guidance" (DOE, 1995). The Summary Category Groups that are applicable to the MTRUW stored and, in some cases, treated at LANL are listed below.

- *Summary Category Group S3000, Homogeneous Solids*: defined as solid waste materials, excluding soil/gravel, that do not meet the EPA LDR criteria for classification as debris.
- *Summary Category Group S4000, Soil/Gravel*: defined as solid waste materials that are at least 50 percent by volume soil/gravel.
- *Summary Category Group S5000, Debris*: defined as a heterogeneous waste stream that is at least 50 percent by volume solid materials exceeding a 2.36-inch particle size that is intended for disposal and is a manufactured object, plant or animal matter, or

natural geologic material. Particle sizes smaller than 2.36 inches in size may be considered debris if the debris is a manufactured object and if it is not a particle of S3000 or S4000 material.

- *Summary Category Group L1000, Aqueous Liquids/Slurries*: defined as aqueous liquids and slurries that meet the EPA LDR criteria for wastewaters (i.e., <1 percent total suspended solids).

Summary Category Groups are applied to MTRUW streams as a general categorization scheme to distinguish between waste types. More specific waste identification systems (i.e., Waste Matrix Codes [WMC] and LANL TRU Waste Stream ID numbers) are used for supplementary purposes as part of waste management operations at LANL. The WMCs that are applicable to the solid MTRUW stored at LANL are:

- *WMC S3100, Inorganic Homogeneous Solid Waste*: includes mixed inorganic homogeneous waste (cemented inorganics, organics on vermiculite, non-cemented, salts, and cemented organics).
- *WMC S5300, Organic Debris Waste*: consists of mixed combustible debris waste (plastic, cellulosics, and rubber).
- *WMC S5400, Heterogeneous Debris Waste*: includes mixed heterogeneous debris waste (varying amounts of combustible and noncombustible debris, with a small amount of homogeneous waste present).

Solid MTRUW is assigned a WMC and is further identified with a LANL TRU Waste Stream ID number. Using the WMC, waste streams are further delineated based on the following prioritized criteria: waste-generating process (to the degree to which waste has been segregated by process); Summary Category Group (i.e., homogeneous or debris waste); waste matrix; and hazardous chemical content (i.e., organics and/or inorganics). The following are general MTRUW stream descriptions:

- Homogeneous Inorganic, Cemented: includes solidified aqueous or homogeneous inorganic solids, solidified inorganic process solids, leached process residues, evaporator bottoms/salts, and/or cement paste.
- Homogeneous Inorganic, Cemented Organics: major portion of the waste is cement (i.e., inorganic) containing a minor portion of cemented solidified organic process solids.
- Homogeneous Inorganic, Non-cemented: includes solid (non-cemented) inorganic waste, ash, dewatered aqueous sludge, and/or chemical treatment sludge.
- Homogeneous Inorganic, Salts: includes pyrochemical, nitrate, and/or chloride salts; hydroxide cake; and/or other salt waste.
- Homogeneous Inorganic, Vermiculite: includes vermiculite-absorbed hydrocarbon oil, vermiculite-absorbed silicon-based liquid, and solidified (non-cemented) organic waste.

- Soil: includes all radioactive-contaminated soil.
- Combustible debris: includes greater than 50% by volume combustible decontamination waste, cellulosics, plastics, rubber, laboratory trash, building debris, hot cell waste, and/or other combustibles.
- Heterogeneous debris: includes greater than 50% by volume noncombustible waste, metal scrap, glass, metal waste, metal crucibles and dies, precious metals, filter media and residue, beryllium-contaminated debris, ion-exchange resins, irradiation sources, firing point sources, leaded rubber, graphite waste, high-efficiency particulate air (HEPA) filter waste, skull and oxide, slag and porcelain, and/or other noncombustible waste.

The WMCs correspond to other historical and current waste identification systems used at LANL. Table C-4 lists the MTRUW streams stored at LANL by their Summary Category Group, WMC, and general matrix description, and provides a cross-reference between past and present waste identification systems.

LANL TRU Waste Stream ID numbers are applied to the MTRUW streams described above. LANL TRU Waste Stream ID numbers are assigned the prefix "LA-", followed by a unique identifier that further delineates the waste stream. The following paragraphs provide examples of the delineated waste streams for the MTRUW stored and, in some cases, treated at LANL. MTRUW information is summarized in Table C-5.

LA-TA-55-19: Mixed Combustible Debris Waste

This waste stream consists of mixed combustible debris waste generated by plutonium recovery, R&D processes, and facility and equipment operations and maintenance. The debris waste includes paper, rags, plastic, rubber, wood-based HEPA filters, and other plastic-based and cellulose-based items.

LA-TA-55-30: Mixed Heterogeneous Debris Waste

This waste stream consists of mixed heterogeneous debris waste generated by plutonium recovery, R&D processes, and facility and equipment operations and maintenance. The waste includes plutonium-contaminated noncombustible and combustible debris waste.

LA-MIN01-CIN: Mixed Inorganic Homogeneous Waste, Cemented Inorganics

This waste stream consists of mixed inorganic homogeneous waste generated by plutonium recovery, R&D processes, facility and equipment operations and maintenance, and liquid waste treatment operations. The waste includes cemented sludge, solidified aqueous waste, and solidified inorganic process solids.

LA-MIN02-V: Mixed Inorganic Homogeneous Waste, Organics on Vermiculite

This waste stream consists of mixed inorganic homogeneous waste generated by plutonium recovery, R&D processes, and facility and equipment operations and maintenance. The waste is comprised of organic liquids (oils and solvents) adsorbed on vermiculite.

LA-MIN03-NC: Mixed Inorganic Homogeneous Waste, Non-cemented

This waste stream consists of mixed inorganic homogeneous waste generated by plutonium recovery, R&D processes, and liquid waste treatment operations. It consists of vacuum filter cake solid waste.

LA-MIN04-S: Mixed Inorganic Homogeneous Waste, Salts

This waste stream consists of mixed inorganic homogeneous waste generated by plutonium recovery, R&D processes, and facility and equipment operations and maintenance. It is comprised of non-cemented inorganic process solids (salts).

LA-MIN05-COR: Mixed Inorganic Homogeneous Waste, Cemented Organics

This waste stream consists of mixed inorganic homogeneous solidified (cemented) organic process solids and emulsified solvents and oils generated by plutonium recovery, R&D processes, and facility and equipment operations and maintenance.

LA-MHD02-238: Mixed Heterogeneous Debris Waste, Pu-238

This waste stream consists of mixed heterogeneous debris waste generated by Pu-238 processing operations (primarily heat-source fabrication) and facility and equipment operations and maintenance. The waste includes Pu-238 contaminated noncombustible and combustible debris waste.

LA-MIN06-C238: Mixed Inorganic Homogeneous Waste, Cemented Inorganics, Pu-238

This waste stream consists of mixed inorganic homogeneous waste comprised of solidified (cemented) inorganic process solids. This waste stream is generated by Pu-238 processing operations (primarily heat-source fabrication) and facility and equipment operations and maintenance.

LA-MHD03-DD: Mixed Heterogeneous Debris Waste, D&D

This waste stream consists of mixed heterogeneous debris waste generated from facility and equipment D&D, including associated sectioning, size reduction, and packaging operations. The waste is comprised of plutonium-contaminated noncombustible and combustible debris waste.

LA-MHD05-ITRI: Mixed Heterogeneous Debris Waste, ITRI

This waste stream consists of mixed heterogeneous debris generated between 1975 and 1984 by the Inhalation Toxicology Research Institute, which is currently operated by Lovelace at the Kirtland Air Force Base, New Mexico. The waste is comprised of laboratory waste that may contain rags, tools, and biological waste contaminated with Pu-239.

LA-MHD07-SNL: Mixed Heterogeneous Debris Waste, Sandia National Laboratory

This waste stream consists of mixed heterogeneous debris waste generated by Sandia National Laboratories. This waste stream may contain lead (D008).

LA-MHD04-RH: Mixed Heterogeneous Debris Waste, Remote-Handled

This waste stream consists of mixed remote-handled heterogeneous debris waste generated by hot cell operations. This waste is comprised of combustible and noncombustible waste.

Sandia National Laboratories/New Mexico - Generated Waste

MTRUW managed at Sandia National Laboratories/New Mexico will be received and stored at LANL for waste certification purposes prior to subsequent reshipment for final disposition. The waste stream consists of combustible and noncombustible debris and may include metals, cellulosics, rubber, plastics, organic matrices, and inorganic materials (see Table C-8).

C.1.3 Treated Wastes

MTRUW, HE waste, and HE-contaminated waste are treated at various waste management units throughout LANL. MTRUW is treated by cementation to stabilize the waste for storage and to meet the WIPP WAC. The HE waste and HE-contaminated waste are treated by OB or OD to remove its reactive characteristic.

C.1.3.1 Treated Mixed TRU Wastes

MTRUW that require treatment are generated primarily from R&D and processing and recovery operations. Treatment of MTRUW at LANL may consist of immobilization/solidification by

cementation to form a noncorrosive solid matrix. Additional specific information on the cementation treatment process is provided in Section C.3.2.3 of this WAP.

C.1.3.2 HE Waste and HE-Contaminated Waste Treated by Open Burning

HE waste and HE-contaminated waste are treated by OB at LANL to remove the hazardous characteristic of reactivity. HE waste generally consists of discrete pieces or volumes of HE, whereas HE-contaminated waste consists of solid or liquid wastes that have been contaminated with HE material. An explosive material is defined as any compound or mechanical mixture that detonates or deflagrates when subjected to heat, impact, friction, shock, or other suitable initiation stimulus. Therefore, HE waste and HE-contaminated waste meet the definition of reactive provided in 20.4.1 NMAC § 261.23 [6-14-00], because they are capable of detonation or explosive reaction if subjected to a strong initiating source or if heated under confinement.

HE waste and HE-contaminated waste are generated at LANL primarily from HE-processing operations, such as machining and pressing; R&D activities, including pilot-scale HE production; D&D; and ER activities. Table C-6 provides a summary of available information on HE waste and HE-contaminated waste treated by OB. These waste streams include homogeneous and heterogeneous wastes as defined in Section C.1.2.1 and are described in the following paragraphs.

<u>HE-Contaminated Water</u>

This waste stream consists of HE-contaminated water that may contain trace solvents and/or regulated hazardous metals. It is generated primarily by laboratory analysis; HE processing; ER, R&D, and D&D activities; drilling activities; and maintenance activities.

<u>HE-Contaminated Solvent Waste</u>

This waste stream consists of HE-contaminated solvents. It is generated primarily by laboratory analysis; R&D, ER, and D&D activities; HE production; spills; and the dissolving of HE and polymers.

<u>HE-Contaminated Used Oil</u>

This waste stream consists of HE-contaminated used oil, which is generated primarily from hydraulic presses and lubrication systems associated with HE-processing operations and ER and D&D activities.

Solid and Scrap HE

This waste stream consists of off-specification or obsolete HE. It is generated primarily from HE processing; testing operations; disposition of weapons; and from ER, R&D, and D&D activities.

HE-Contaminated Commercial Chemical Products

HE-contaminated commercial chemical products may be generated at various technical areas (TA) throughout LANL that manage HE. This waste generally consists of spilled commercial chemical products contaminated with HE.

Wet HE

This waste stream consists of wet HE-machining chips, ER and D&D wastes, sludges, spent activated carbon, filters, and filter solids that result primarily from the filtration of HE wastewater; ER, R&D, and D&D activities; and HE processing.

HE-Contaminated Solid Waste

This waste stream may include HE-contaminated rags, paper, glassware, tools, and other waste. These wastes may also be contaminated with solvents or oil. This waste stream is generated primarily from HE-processing activities; laboratory use; and ER, D&D, R&D, and drilling activities.

HE-Contaminated Equipment

This waste stream consists of HE-contaminated equipment, which includes discarded, noncombustible equipment and material from HE-processing areas; D&D, R&D, and ER activities; and laboratory use. This waste stream is typically recycled after treatment.

HE-Contaminated Liquid Acids, Bases, and/or Inorganic Salt Solutions

This waste stream consists of liquid acids, bases, and/or inorganic salts. It may include materials used as titrants, solvents, cleaning fluids, and/or materials from hydrolysis research.

C.1.3.3 HE Waste and HE-Contaminated Waste Treated by Open Detonation

The HE waste and HE-contaminated waste treated by OD typically consist of off-specification explosive wastes, scrap explosive waste, and other HE-contaminated solid wastes (e.g., rags, glass, wood). These wastes are characteristic for reactivity, as defined in Section C.1.3.2. OD treatment of these wastes involves an explosion that chemically transforms the HE component of the waste faster than the speed of sound.

Table C-7 provides a summary of available information on HE waste and HE-contaminated waste that is treated by OD. These waste streams include homogeneous and heterogeneous wastes and are described briefly below.

HE-Contaminated Solid Waste

This waste stream may include HE-contaminated rags, paper, glassware, tools, and other waste. These wastes may also be contaminated with solvents or oil. This waste stream is generated primarily from HE-processing activities; laboratory use; and ER, D&D, R&D, and drilling activities.

Solid and Scrap HE

This waste stream consists of off-specification or obsolete HE. It is generated primarily from HE processing; testing operations; disposition of weapons; and from ER, R&D, and D&D activities.

C.1.4 Description of Waste Management Units

The waste management units used for storage and treatment of wastes addressed in this WAP are located within numerous TAs at LANL. These units are listed in Attachment O (*Hazardous Waste Management Units*). Detailed information on the waste management units is provided in the TA-specific permit applications, permit modification requests, or permit renewal documents.

C.2 WASTE ANALYSIS PARAMETERS [20.4.1 NMAC § 264.13(a)(1)]

Detailed chemical and physical characterization will be performed on hazardous wastes, the hazardous component of MLLW, the hazardous component of MTRUW, HE wastes, and HE-contaminated wastes for management purposes, as required by 20.4.1 NMAC § 264.13. Waste analysis parameters will be selected to ensure that the waste characterization documentation will contain the information necessary to properly manage the waste in accordance with Resource Conservation and Recovery Act (RCRA) general facility standards in 20.4.1 NMAC, Subpart V, Part 264, and LDR requirements in 20.4.1 NMAC, Subpart VIII, Part 268.

C.2.1 Proposed Analytical Parameters and Methods [20.4.1 NMAC § 264.13(b)(1), and 20.4.1 NMAC § 270.14(b)(2)]

Analytical parameters and characterization methods that will be used for hazardous wastes, MLLW, MTRUW, and HE and HE-contaminated wastes generated at LANL are summarized in Tables C-9 through C-12. The parameters listed below will be used, as necessary, to determine the RCRA regulatory status of the wastes listed in Section C.1.

- Acceptable Knowledge (AK)
- Sampling and analysis to determine the presence and concentrations of:
  - RCRA-regulated metals
  - RCRA-regulated volatile organic compounds (VOC)
  - RCRA-regulated semivolatile organic compounds (SVOC)
- Additional MTRUW characterization sampling methods
  - Headspace gas sampling to determine the presence of VOCs in container headspace
  - Physical waste form characterization through real-time radiography (RTR) and/or visual examination to verify the absence of prohibited items (e.g., liquids and sealed >4 liter containers)
- Flash point characterization
- pH characterization
- Reactivity characterization
- Additional characterization data

C.2.2 Criteria and Rationale for Parameter Selection [20.4.1 NMAC § 264.13(b)(1)]

Parameter selection for waste characterization is based on the physical form of the waste (e.g., debris) and on knowledge of the process generating the waste. To determine whether a solid waste is hazardous, LANL uses AK (which includes process knowledge), supplemented by sampling and analysis, if necessary, as described in Sections C.3.1.1 and C.3.1.2. The analytical parameters selected to confirm knowledge-based waste characterization for hazardous waste, MLLW, and MTRUW, and the rationale for the selected parameters are identified in Tables C-9, C-10, and C-11, respectively. MTRUW characterization incorporates characterization procedures from the WIPP permit (NMED, 2003) requirements, which are based on knowledge of raw materials and physical/chemical processes of waste-generating activities and by verification methods. Additional characterization procedures will be implemented as needed to meet the requirements of the WIPP permit or other LANL waste permit conditions. Parameters for HE waste and HE-contaminated waste are selected to characterize the hazardous and explosive components of the waste and are based on knowledge of raw materials and physical/chemical processes of waste-generating activities. The rationale for HE waste and HE-contaminated waste parameter selection is identified in Table C-12.

Appendix III of 20.4.1 NMAC, Subpart 200, Part 261, provides references which list approved analytical methods used to determine the concentrations of hazardous constituents in the liquid and solid fractions and extracts of waste samples. All the methods are fully described in the most recent version of *SW-846*. These and other approved methods approved by the Department will be used, as necessary, to determine whether a waste stream is hazardous. Samples will not be analyzed for all listed hazardous constituents, only those that are most likely to be present based on the source of the waste stream and all constituents the laboratory analytical method is capable of measuring.

Detailed instructions for conducting Toxicity Characteristic Leaching Procedure (TCLP) waste analysis are found in the most recent version of "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" *(SW-846)* and are incorporated by reference into 20.4.1 NMAC, Subpart 200, Part 261, Appendices II and III. Also listed in the most recent version of *SW-846* is the appropriate analytical method for each hazardous constituent required to determine if the waste contains a contaminant in excess of the maximum contaminant concentration regulated under 20.4.1 NMAC, Subpart 200, Part 261. TCLP is a method for leaching hazardous constituents from the solid portion of the waste and is used only if the solids constitute more than 0.5% of the waste by weight. The laboratory can also forego extraction if: 1) total analysis of the waste shows the concentrations of the analytes are so low, an extract of the waste could not contain analytes at concentrations above the regulatory limits; or 2) analysis of any liquid portion of the waste contains such high concentrations of hazardous constituents that, even accounting for dilution, the entire sample would be hazardous.

Many RCRA hazardous wastes are restricted from land disposal under the Hazardous and Solid Waste Amendments unless they are treated first to substantially diminish their toxicity and reduce the likelihood that hazardous constituents will migrate from the disposal site. As required in 20.4.1 NMAC, Subpart 800, Part 268, each waste shipment must be accompanied by a notification stating whether the restricted waste meets specific LDR treatment standards promulgated for hazardous constituents, or is otherwise exempt. In most cases, the notification can be completed after laboratory analysis of the waste. If an LDR notification is based solely on knowledge of the waste, the supporting documentation will be kept on record, in accordance with 20.4.1 NMAC § 268.7.

C.3 CHARACTERIZATION PROCEDURES [20.4.1 NMAC §§ 264.13(a)(1) and 264.13(b)(2), and 20.4.1 NMAC § 270.14(b)(2)]

Throughout LANL, it is required that characterization of wastes be considered before a waste-generating process will begin. The preliminary characterization of waste begins prior to actual generation (at the point of concept and design of a process or system), which in turn allows the generator to determine whether AK, sampling and analysis, or a combination of the two will be required prior to actual waste characterization for transport to the TA-54 storage facility.

The approach to characterization of hazardous wastes, MLLW, MTRUW, HE wastes, and HE-contaminated wastes is based on the chemical, physical, and radiological nature of the waste stream. Characterization procedures require that information for the waste stream be provided on a unique waste characterization document, generally referred to as a waste profile form, accompanied by sampling and analysis data or AK documentation. These documents are collectively referred to as the waste characterization documentation. The waste characterization documentation is submitted to Facilities and Waste Operations-Solid Waste Operations (FWO-SWO) personnel for review, classification, and approval prior to acceptance at TA-54. This characterization is accomplished by using AK and/or sampling and analysis, which are described in the following sections.

Trained personnel review the waste characterization documentation for adequacy and waste acceptance criteria (WAC) acceptability. Training for use of waste characterization documentation is included in a facility waste documentation course. This training provides step-by-step instructions on how to complete forms for characterizing wastes. If the documentation is incomplete or does not contain sufficient information to adequately characterize or classify the waste, the documentation is returned to the generator for additional information. Examples of further documentation that may be requested include more detailed process knowledge and description or additional/new analytical data to meet WAC requirements for the off-site treatment, storage, or disposal facility (TSDF).

Waste characterization documentation allows determination of compliance with the information requirements of Permit Section 2.4.1, including the determination of waste classification and assignment of EPA Hazardous Waste Numbers; preparation of LDR documentation; and proper management of the waste. Once the waste characterization documentation is reviewed, classified, and approved, the generator is notified and paperwork is prepared for shipping. The

shipping documentation is submitted to FWO-SWO personnel and reviewed against the waste characterization documentation and Department of Transportation regulations. If approved by FWO-SWO personnel, the waste shipment is scheduled for transport to the appropriate TSDF. If the shipping documentation is inadequate or does not correspond with the characterization documentation, the shipping documentation is returned to the generator for corrections.

Upon receipt and prior to accepting the waste containers for storage at TA-54, waste shipments are inspected to ensure that the shipping documentation and the waste characterization documentation have the proper approvals in addition to ensuring that compliance with the WAC and all federal and state regulations are met. At TA-54, both the waste characterization documentation and the shipping documentation become part of the operating record upon receipt of the waste. These records will be made available within a reasonable timeframe to the NMED, upon request.

Subsequent transport of waste streams whose waste characterization has been previously approved by FWO-SWO personnel shall be accompanied by a certification statement from the waste generator that the waste has not changed significantly so as not to be accurately represented by the previously approved waste characterization information.

Reevaluation of initial characterization information is performed to verify the accuracy of the initial waste characterization, to ensure that applicable treatment standards have been met, when there is a change in a waste-generating process, when the generator requests a review, or when analytical results indicate a change in a waste stream. Waste streams are reevaluated annually to verify that they have not changed. This annual reevaluation will be accomplished through review and recertification of applicable waste characterization documentation, and the documented reevaluation will be maintained in the facility operating record. Any information that indicates a change in the process that generates the waste and/or affects the waste will require the waste to be recharacterized. Furthermore, one-percent of wastes whose characterization is based solely on acceptable knowledge have that characterization verified annually utilizing quantifiable laboratory analysis to ensure its accuracy in accordance with Section C.3.1.3.

C.3.1 Hazardous and Mixed Low-Level Waste Characterization

Characterization procedures for hazardous waste and MLLW are selected based on the physical nature of the waste stream (e.g., homogeneous or heterogeneous waste).

Homogeneous solid waste will be characterized for the presence of hazardous components of the waste (i.e., VOCs, SVOCs, and metals) on the basis of AK and, if necessary, sampling and analysis. Heterogeneous solid waste is typically characterized on the basis of AK for the following reasons: (1) the physical, chemical, and/or radiological nature of the waste makes it difficult to obtain representative samples; (2) the lack of appropriate sampling methodology; and (3) for MLLW, safety concerns associated with unnecessary exposure to the radioactive component of the waste (i.e., as low as reasonably achievable [ALARA] concerns). In the event AK is used to characterize the waste, characterization documents are reviewed with the help of subject matter experts, when necessary, to achieve the most comprehensive characterization available before waste is approved for transport to TA-54.

Chemicals of an unknown nature are handled on a case-by-case basis. The individual waste is initially characterized by knowledge of the operations and activities that were performed in the specific area in which the waste was generated. This information, if available, is used to restrict the choices of initial waste analysis to a smaller population of chemicals and is not the sole basis of waste characterization. In the event that RCRA hazardous wastes are present in the initial waste analysis, more definitive AK is obtained, including, as appropriate, further analysis for sufficient and complete waste characterization prior to waste acceptance at TA-54.

For purposes of managing unknown wastes, a small volume is defined at LANL as one liquid gallon (approximately four liters) or less. The rationale for the small volume designation is that this is the minimum quantity of sample needed to test if the waste is hazardous. At and below this limit, the sample may be consumed in the analytical procedure. Small volumes of unknown wastes are typically analyzed for pH, flash point, and reactivity. This allows the material to be categorized for further management.

Volumes greater than one gallon (four liters) of a single unknown waste allow a more detailed analytical scheme. These wastes are tested for ignitability, corrosivity, reactivity, toxicity characteristics, and/or any other parameters indicated by the initial data gathered on the material. Sufficient detail must be reported to allow the determination of the proper EPA Hazardous Waste Number(s) and LDR status. Characterization methods used are provided in Tables C-9 and C-10.

Information regarding the presence of free liquids in containers of hazardous waste and MLLW is obtained through generator waste-characterization knowledge, visual examinations, and/or the Paint Filter Liquids Test.

HE waste and HE-contaminated waste at LANL are treated by OB to remove the characteristic of reactivity. They are considered, by definition, to be reactive because they meet the RCRA requirement of being "capable of detonation or explosive reaction if subjected to a strong initiating source or if heated under confinement." Regulations do not specify a particular test method for reactivity of HE waste and HE-contaminated waste, so the determination of whether a waste is HE-contaminated is made based on the properties of the chemicals known or suspected to be in the waste and/or field screening or laboratory analysis. Wastes that contain concentrated HE are characterized by process knowledge, as described in Section C.3.1.1.1. Wastes that may contain HE in lower concentrations are characterized by both process knowledge and/or the following techniques to determine whether HE in lower concentrations is detonable/explosive:

- If it is unknown whether HE is present, a screening method, such as the DX-2 Spot Test or DeTech, may be used.
- If heterogeneous waste contains visible HE, it is considered reactive.
- If heterogeneous waste came into direct contact with HE and all of the surfaces cannot be tested or visually examined (e.g., debris or equipment), it is assumed that there is a reactive amount of HE associated with it.
- HE concentrations may be directly measured in homogeneous materials (e.g., soil or water). This is usually done using the appropriate analytical method from the most recent version of *SW-846* Method 8300 series. Parameters such as the concentration of HE, its sensitivity, and the media in which it occurs are used to determine whether the waste is likely to be reactive or not.

Characterization methods for HE and HE-contaminated wastes are summarized in Table C-13.

OB completely removes the reactive characteristic from HE-contaminated wastes. These wastes, however, may also exhibit RCRA toxicity characteristics or contain listed wastes. In some cases, OB is effective in removing these other characteristics (e.g., 2,4-dinitrotoluene and solvents). This is not the case when it comes to HE contaminated with RCRA metals. Untreated HE-contaminated wastes do not usually contain metals in high enough concentrations to be considered hazardous. Once the waste has been treated by OB, however, the metals are concentrated in the residue ash/debris. The treatment process may also oxidize

parent metals, making them more soluble, which can cause the residue to fail the TCLP. Sampling and analysis for ash generated by OB are summarized in Table C-14.

C.3.1.1. Acceptable Knowledge [20.4.1 NMAC §§ 264.13(a)(2) and 264.13(b)(5), and 20.4.1 NMAC § 270.14(b)(2)]

The physical, chemical, and radiological nature of some waste forms (e.g., heterogeneous) makes collection of representative samples for characterization difficult. This difficulty arises from several factors, some of which include: waste streams that contain disparate elements; disparate elements may need to be segregated into similar forms; large objects which cannot fit within standard size sample containers; and laboratories which do not have the capability to sample large objects (EPA, 1992). Other difficulties arise from health and safety risks to personnel due to potential exposure to radioactive material (i.e., ALARA concerns) or explosive material.

Acceptable knowledge is a method used to characterize the waste streams utilizing process knowledge and additional waste analysis data. According to EPA guidance, *acceptable knowledge* is broadly defined to include process knowledge, additional characterization data, and/or facility records of analysis (EPA, 1994A). Consistent with the 1994 guidance, EPA defined “acceptable knowledge” as it applies to TRU waste destined for WIPP as “any information about the process used to generate the waste, material inputs to the process, and the time period during which the waste was generated . . .” [Code of Federal Regulations, Title 40 (40 CFR), § 194.254(c)(3)]. EPA recognizes AK as an “integral part” of the system for controls for waste characterization of certain types of DOE waste (see *67 FR 51930, 51942* [August 9, 2002]).

Process knowledge is described in 20.4.1 NMAC § 264.13(a)(2) [6-14-00], as data developed under 20.4.1 NMAC, Subpart II, Part 261, and existing published or documented data on a specific hazardous waste or hazardous waste generated from similar processes. EPA described *process knowledge* as knowledge of waste characteristics derived from information generated contemporaneously with the waste on the materials or processes used to generate the waste. This information may include administrative, procurement, and quality control documentation associated with the generating process, or past sampling or analytical data. Usually, the major elements of process knowledge include information about the process used

to generate the waste, material inputs to the process, and the time period during which the waste was generated (see *67 FR 51934*).

Additional characterization data includes data obtained from chemical or physical analysis or review that is not subject to RCRA protocols, such as the most recent version of *SW-846* and other approved methods, or through testing of similar or surrogate waste streams. These data can be used to determine if wastes are RCRA-regulated and to determine LDR status.

Facility records of analysis consist of waste analysis and/or physical characterization performed prior to the effective date of RCRA regulations. These analytical results must be accurate and applicable to the specified waste and should be supplemented with other existing information (e.g., published data).

For characterization, the following examples from EPA guidance (EPA, 1994A) are appropriate for the use of AK:

- Hazardous components in wastes from specific processes are well documented, such as with F-listed and K-listed wastes.
- Wastes are discarded unused commercial chemical products, reagents, or chemicals of known physical and chemical properties.
- Health and safety risks to personnel would not justify sampling and analysis (e.g., radioactive mixed waste).
- Physical nature of the waste does not lend itself to taking a laboratory sample.

Waste characterization documentation based solely on AK is reviewed by appropriate personnel, with the aid of subject matter experts if necessary, to determine if one or more of the above criteria have been met. The criteria must be documented, available for review to ensure that a valid and accurate RCRA hazardous waste characterization can be made before acceptance at TA-54, and listed and summarized on a waste profile form. While AK documentation will be maintained at the generator's location in paper form for at least three years, and in an electronic form at the Facility until closure of the associated permitted unit, it must be in a format so that waste management personnel and/or subject matter experts can obtain copies or review the documentation. The latter would be the case with classified or sensitive AK documentation that cannot be sent to TA-54 due to security requirements. A traceable identifier (i.e., process or AK document number or alphanumeric designation) is assigned by the generator on the waste characterization documentation, and must be

referenced in such a way that generators can access the information for as long as required by RCRA regulation and this Permit.

C.3.1.1.1 Process Knowledge

For characterization, process knowledge consists of one or more of the following:

- Detailed information on a waste stream obtained from existing published or documented waste analysis data;
- Studies conducted on hazardous wastes generated by processes similar to that which generated the waste; and
- Knowledge of the materials and operations that generated the waste and that demonstrates the potential for hazardous components in the waste. For example, metals present in debris waste are often associated with specific materials (e.g., lead in leaded rubber or lead shielding).

Waste generators obtain, assemble, and prepare the process knowledge documentation for each waste stream. There are many sources of applicable documentation at LANL that are acceptable to substantiate process knowledge for a specific waste stream. Examples of documentation that are acceptable include, but are not limited to, the following:

- Process design documents (e.g., Title II Design).
- Preliminary and final safety analysis reports, unreviewed safety question determinations, and technical safety requirements.
- Standard operating procedures and detailed operating procedures, which can include a list of the raw materials or reagents, a description of the process/experiment that uses the materials, and a description of the wastes generated and how the wastes are handled.
- Waste packaging logs.
- Test plans or research project reports that describe the reagents and other raw materials used in an experiment.
- Site databases (e.g., chemical inventory database for Superfund Amendments and Reauthorization Act Title III requirements).
- Information from site personnel (e.g., documented interviews).
- Standard industry practice documents (e.g., vendor information).
- Industry reports on a similar process when there is a clear connection between the LANL process/experiment and the industry's similar process/experiment.
- Previous analytical data relevant to the waste stream, including results from fingerprint analyses, spot checks, or routine waste verification sampling.

- Analytical data from studies of common industry processes that are similar to LANL processes. These data can be used to identify the chemical composition in a specific "similar" process waste stream and to determine the regulatory status of the waste.
- Material Safety Data Sheets, product labels, and other product package information.
- Sampling and analysis data from comparable waste streams.
- Documented visual inspections to confirm or identify the physical characteristics and packaging of a waste.
- Laboratory notebooks that detail the research processes and raw materials used in an experiment.
- ER site characterization data, waste characterization data, waste characterization strategy documentation, and RCRA Facility Investigation documentation.

C.3.1.1.2 Additional Characterization Data

Additional characterization data used for AK include information for the waste stream provided by the generator. These data may be qualitative in nature, not subject to an approved quality control program, or performed on a similar waste stream. This information can be the result of a recent analysis of the waste, a well-documented historical analysis of the waste, and/or the analysis of a surrogate waste stream. For example, data from the analysis of nonradioactive leaded-rubber glove waste may be used to evaluate the characteristics of similar radioactive leaded-rubber glove waste. Sampling nonradioactive inputs or outputs from processes may also provide data that are useful for characterizing a similar mixed waste stream.

C.3.1.2 Sampling and Analysis [20.4.1 NMAC §§ 264.13(a)(3), 264.13(b)(2), (3), and (4), and 20.4.1 NMAC § 270.14(b)(2)]

This section discusses proposed sampling and analytical procedures and frequency of sampling applicable to hazardous waste and the hazardous component of MLLW. The approach described for characterizing these waste types is based on the radiological, physical, chemical, and hazardous properties of the waste. If necessary for waste characterization purposes, chemical data will be obtained, as needed, through solid and liquid waste sampling techniques.

For waste streams that can be representatively sampled (i.e., homogeneous), sampling and analysis is performed when a waste lacks sufficient process information to adequately characterize the waste based on AK. A representative sample of the waste is collected and handled by means that preserve its original physical form and composition and prevent contamination or changes in concentration of the constituents to be analyzed. Analytical methods for the determination of RCRA-regulated metals, VOCs, and SVOCs are conducted to

meet certain technical performance criteria and to be consistent with regulatory guidelines. Personnel involved in sampling and analysis comply with LANL-specific protocol consistent with the most recent version of *SW-846* (EPA, 1986) and/or other Department approved methods.

Many analytical laboratories provide sample containers and specify required minimum volumes for individual waste types or physical states. The most important determinants of sampling method and volume are the physical state of the waste (liquid, solid, sludge), the waste container (drum, tank), accessibility, waste variability, and safety concerns. Detailed sampling recommendations and guidance are provided in the most recent version of *SW-846*, Chapter 9. For solids, 500 grams in a glass container is usually adequate. Liquid sample volumes vary from one liter to approximately eight liters, depending on the number of analysis parameters and solids content. Sample jars for samples to be analyzed for VOCs must be completely filled to minimize volatilization of contaminants from the liquid into the headspace.

Sampling is performed with a device appropriate for the waste being sampled. Sampling devices include, but are not limited to, weighted bottles, bailers, or composite liquid waste samplers for sampling liquids in drums, pits, or tanks. Augers, triers, scoops, shovels, and similar types of devices are useful for sampling solid wastes in containers or other locations.

The aim of the sampling method is to obtain a sample or samples representative of the waste stream. Sampling personnel must use an understanding of the waste-generating and -handling processes to ensure samples are representative. Some wastes separate into distinct layers with time, and representative samples must include aliquots from each layer. In some cases, it may be important to use a statistical or random sampling scheme that provides for the collection of representative samples.

A number of criteria must be considered in determining how many samples are required, how locations are selected, and how frequently sampling should be repeated. If a highly uniform waste stream is generated from a single process location, one sample collected annually is sufficient. However, if a single waste stream is a mixture of materials generated in several locations under varying conditions through time, more samples will be required, and composite sampling may be appropriate. At a minimum, the sampling must be repeated if the waste-generating process changes in a way that might alter the EPA Hazardous Waste Number(s) and LDR status of the waste, or if inspection of the waste reveals it has changed.

Appendix I of 20.4.1 NMAC, Subpart 200, Part 261, lists specific guidance documents that detail sampling protocols for different waste types. Waste samples collected in accordance with these protocols are considered representative by EPA. The protocols include standards developed by the American Society for Testing and Materials (ASTM) and portions of the most recent version of *SW-846*.

C.3.1.2.1 Solid Waste Analysis [20.4.1 NMAC § 264.13(b)(3)]

If necessary for waste characterization purposes, solid homogeneous waste streams are sampled and analyzed for total metal content, VOCs, and SVOCs. The sampling protocol for solid hazardous waste and MLLW is based on sampling methods approved by EPA for solid waste and soil sampling in the most recent version of *SW-846*, as well as other Department approved methods. These methods are designed to ensure that representative waste samples are collected consistently and transferred to the responsible laboratory in a manner that maintains sample integrity.

If necessary for waste characterization purposes, homogeneous waste streams will be sampled and analyzed for the toxicity characteristic (TC) contaminants listed in 20.4.1 NMAC § 261.24 [6-14-00]. Analysis for total concentration of TC contaminants will be performed on samples in a screening step, as described in Section 1.2 of Method 1311 (TCLP). If total concentrations are used in the waste characterization process, analytical data will be compared to the TC regulatory levels expressed as total values. These total values will be considered the regulatory threshold limit (RTL) values for the determination of whether a particular waste exhibits a TC. RTL values are obtained by calculating the weight/weight concentration (in the solid) of a TC contaminant that would give the regulatory weight/volume concentration in the TCLP extract. If the total concentrations are less than the RTL value, the waste does not exhibit the toxicity characteristic and the TCLP does not need to be completed for the screened TC contaminants.

C.3.1.2.2 Liquid Waste Analysis

Liquid wastes generated at LANL consist of aqueous solutions, slurries, and organic liquids. If necessary for waste characterization purposes, these wastes will be sampled and analyzed for total metal content, VOCs, and SVOCs. In accordance with Method 1311 (TCLP), liquid wastes (i.e., those wastes that contain less than 0.5 percent dry solids) do not require extraction. The liquid waste, after filtration, is defined as the TCLP extract. Liquid waste, therefore, is characterized by filtering the waste, measuring total contaminant concentrations in the resulting

filtrate, and comparing these concentrations to the TC regulatory levels in 20.4.1 NMAC § 261.24 [6-14-00].

Wastes that contain both a liquid and a solid phase are characterized using total analytical data for the solid phase to determine toxicity characteristics. This is accomplished by comparison with the TC regulatory levels for each phase in a manner consistent with the discussion in Section C.3.1.2.1. The following formula (EPA, 1994b) will be used to calculate the maximum theoretical leachate concentrations for the combined phases:

$$\frac{[A \times B] + [C \times D]}{B + [20 \text{ liters/kilogram} \times D]} = M$$

Where,

A = concentration of the analyte in the liquid portion of the sample (milligrams/liter)
B = volume of the liquid portion of the sample (liter)
C = concentration of the analyte in the solid portion of the sample (milligrams/kilogram)
D = weight of the solid portion of the sample (kilogram)
M = maximum theoretical leachate concentration (milligrams/liter).

C.3.1.2.3 Sample Handling, Preservation, and Storage

Table C-15 presents requirements specified in the most recent version of *SW-846* regarding sample containers, preservation techniques, and holding times associated with sample collection. Adherence to these requirements will ensure that sampling and analysis meet quality objectives for data. In the event the specified criteria are not met, another sample will be collected and submitted for analysis.

C.3.1.2.4 Analytical Laboratory Selection and Analytical Methods [20.4.1 NMAC § 264.13(b)(2)]

Analytical laboratories at LANL and/or approved subcontractor laboratories will perform the detailed qualitative and quantitative chemical analyses specified in Tables C-16 and C-17 of this WAP. These laboratories must have:

- A documented comprehensive quality assurance (QA)/quality control (QC) program
- Technical analytical expertise
- A document control/records management plan

- The capability to perform data reduction, validation, and reporting.

The selection and development of analytical testing methods for LANL waste streams were based on the following considerations:

- The physical form of the waste
- Analytes of interest
- Required detection limits (e.g., regulatory thresholds including the LDR Universal Treatment Standards)
- Information requirements (e.g., verify compliance with LDR treatment standards, waste classification).

Collectively, these factors contributed to the selection of the analytical methods specified in Tables C-16 and C-17. Qualified analytical laboratories at LANL and/or approved subcontractor laboratories that meet the above criteria will be used for the required analyses.

C.3.1.3 Verification Frequencies [20.4.1 NMAC §§ 264.13(a)(3) and 264.13(b)(4)]

Verification frequencies vary by the types of waste received at each LANL treatment or storage facility. As the primary storage and shipping facility at LANL, TA-54 manages the widest variety of waste streams. A limited number of HE waste streams, primarily debris, are managed at the OB units.

The waste verification process at TA-54 applies to waste received at that facility and designated for storage and/or off-site treatment and/or disposal. Personnel involved in verification activities are trained and qualified for the activities they perform. A complete listing of waste verification processes are identified at Permit Part 2, Section 2.4.7.

LANL will annually verify the waste characterization of one percent of hazardous wastes characterized solely utilizing acceptable knowledge (40 CFR §264.13(b)(4)). Such waste characterization verification shall be performed by quantitative chemical analysis appropriate for the waste as specified in this *Waste Analysis Plan* (Attachment C). The one percent of wastes whose characterization is to be verified shall be determined in relation to the total number of waste streams managed at TA-54 in the previous calendar year. To count waste streams within a year, each waste material generated from a single process or from an activity that is similar in material, physical form, and hazardous constituents, and is distinguishable from other waste material by EPA Hazardous Waste Numbers and Land Disposal Restriction status, shall be

counted. The waste streams whose waste characterization is to be verified shall be chosen without bias and the selection procedure shall be documented in the operating record. Waste streams not required to undergo this annual verification and not to be counted toward the total number of waste streams managed in the previous year include mixed wastes, hazardous debris, and hazardous wastes that are hazardous only because they are listed at 40 CFR Part 261, Subpart D.

Once the waste stream has been designated for verification, waste verification personnel are notified of its pending arrival at TA-54. Waste streams needing verification are sampled in accordance with approved EPA and ASTM protocols.

If the characterization for the waste stream is found to be inconsistent with the documentation, a non-conformance report (NCR) is issued. The NCR program is used both to trigger further verification of waste and as enforceable criteria for the TA-54 waste verification program. Depending on the severity of the discrepancy, the waste generator or waste-generating facility may be subject to increased verification review under the program, and the waste may not be accepted for management at TA-54.

The verification program for wastes treated at the OB units is different because debris and HE are the predominant types of waste treated and because there are a limited number of waste streams. Due to the difficulty in analyzing debris, information on the waste-generating process becomes the primary source of information. Verification for debris occurs in two stages. The debris is first visually inspected before treatment to ensure that the received waste matches the description on the waste characterization documentation. Then, any residues separated from the debris before or after treatment are analyzed each time a new waste stream is treated. If analysis of the residues finds constituents not identified on the waste characterization documentation for the incoming waste, treatment facility personnel contact the waste generator and conduct a thorough review of the process generating the waste. Based on the review, the generator may be requested to modify the waste characterization documentation. Solid and scrap HE and wet HE are not usually sampled because the formulations are closely controlled and well known, and HE waste is dangerous to transport off site for analysis. In addition to the transportation considerations, HE is by definition “energetic” and may react adversely to dissolution with acids, extraction with solvents, and sample size reduction techniques used in standard laboratory analytical procedures.

For other HE waste streams, initial chemical analysis by the generator is required. Analysis is also required if the waste-generating process changes. Additional analytical testing from generators may be requested based upon the following criteria:

The complexity of the waste-generating process,

Constituents identified during testing of residues were not included on original waste characterization documentation,

Incomplete or suspect documentation, and/or

Past performance of the waste generators.

The frequency of sampling OB/OD treatment residues is, at a minimum, each time a new waste stream is treated. Treatment residues may be sampled more frequently, considering the above criteria. LANL will maintain in the operating record a list of waste streams previously treated so as to be able to identify new waste streams.

For wastes managed at the TA-55 hazardous and mixed waste management units, the waste may be verified through the TA-54 waste verification process. Wastes treated by cementation at TA-55 are subject to institutional controls, which assure that the waste composition is constant. Because this waste-generating process does not change, subsequent review through the TA-54 waste verification process is sufficient.

C.3.2 Mixed Transuranic Waste Characterization

MTRUW characterization and certification for disposal in WIPP is performed by the Centralized Characterization Project (CCP), which is under contract with the U.S. DOE Carlsbad Field Office (CBFO) to perform TRU waste characterization and certification services at many sites throughout the DOE complex. The interfaces between LANL and CCP are described in the most recent revision of the CCP/LANL Interface Document (CCP, 2006a). LANL is responsible for safely storing MTRUW, providing areas where CCP equipment can be set up and operated, providing waste that can be certified for disposal in WIPP, and repackaging any waste that cannot be certified for disposal in WIPP. CCP provides the equipment, personnel, procedures, and training to characterize MTRUW, certify that waste for disposal, and transport that waste to WIPP. The following summarizes the requirements for characterizing and certifying waste for disposal, as presented in the most recent revision of the "CCP Transuranic Waste Characterization Quality Assurance Project

Plan" (CCP 2007a). MTRUW not destined for WIPP is characterized as described in Section B.3.2.2 of this WAP. All MTRUW will undergo review to determine its prohibition status with regard to the land disposal restrictions of 40 CFR Part 268.

Initial characterization of both homogeneous and heterogeneous MTRUW is based primarily on AK. Additional characterization to meet WIPP certification procedures will be implemented at appropriate LANL or other facilities to meet requirements of the WIPP WAP permit conditions. Pursuant to WIPP certification and WIPP WAP requirements, further characterization of homogeneous waste will be accomplished through AK, statistically-based sampling and analysis, headspace gas sampling, RTR, and visual examination. Further characterization of heterogeneous waste will be implemented at appropriate LANL or other facilities using AK, headspace gas sampling, RTR, and visual examination. MTRUW not destined for WIPP but stored at LANL is characterized using the routine procedures used for hazardous waste and MLLW, as discussed in Section B.3.2.2.

The MTRUW streams described in Section B.1.2.3 are categorized by Summary Category Groups based on the physical and chemical form of the waste. Homogeneous waste streams in the solid process residue (Summary Category Group S3000), soil/gravel (Summary Category Group S4000), or aqueous liquids/slurries (Summary Category Group L1000) categories may contain RCRA-regulated VOCs, SVOCs, and metals and will be characterized using AK and/or sampling and analysis. Debris waste streams (Summary Category Group S5000) consist of heterogeneous materials and, as such, it is difficult to obtain representative samples of these wastes. Therefore, debris waste will be characterized for the presence of hazardous components using AK based on examination of the original materials and operations from which the waste was generated, followed by RTR, visual examination, and headspace gas sampling.

MTRUW storage at Area G that has been identified as containing free liquids will be managed with secondary containment.

The QAPjP referenced above addresses MTRUW characterization procedures to be utilized after the waste is stored at LANL. These procedures were developed primarily to meet the off-site WAC. CCP's use of these procedures is designed to allow appropriate waste characterization information obtained for storage to serve as a basis for or to supplement future characterization needs without a

duplication of effort. Because the QAPjP and other WIPP permit-derived documents addressing MTRUW characterization are subject to change as new information is provided, developed, or approved, and because LANL is not subject to their requirements in LANL's operating permit for storage, but rather utilizes them as waste management guidelines, this WAP will not be modified as ongoing changes to the referenced documents occur.

CCP has prepared a records inventory and disposition schedule for all waste characterization data and related QA/QC records for MTRUW to be shipped to WIPP. These documents will be designated as Lifetime Records or Non-Permanent Records as defined by the schedule and Table B-6 of the WIPP permit. Lifetime Records will be maintained for the life of the LANL MTRUW characterization program plus six years and then offered to WIPP or the appropriate Federal Records Center for permanent archival. Non-Permanent Records will be maintained for 10 years after the date of record generation and then disposed of according to the schedule.

CCP TRU Waste Certification Plan

The most recent revision of the CCP TRU Waste Certification Plan (CCP, 2007b) incorporates the certification requirements of the "Waste Acceptance Criteria for the Waste Isolation Pilot Plant" (WIPP WAC) (DOE, 2002 or most recent version) for MTRUW that will be sent to that site. It establishes the programmatic framework and requirements within which waste generators operate to ensure that their wastes can be certified as meeting the sampling, characterization, and packaging requirements of the WIPP WAC. These include CCP documents and procedures by which the waste stream analytical data and other AK information are evaluated. Once this documentation has been prepared, it is subject to review and approval by CCP and CBFO personnel. Waste generators also participate in external audits, as required by the QAPjP and the CCP TRU Waste Certification Plan, to verify the characterization and certification process. If the requirements of the WIPP WAC and the "CCP Transuranic Authorized Methods for Payload Control" (CCP, 2006b) are met, the waste will be certified and transported to WIPP.

Acceptable Knowledge

AK characterization procedures for MTRUW stored at LANL prior to certification for WIPP acceptance are the same as those described in Section B.3.1.1. The CCP QAPjP (CCP, 2007a) describes how CCP ensures compliance with the WIPP requirements associated with the compilation, confirmation, and administrative controls of AK information. CCP procedures

consistent with the WIPP WAP are used to implement AK as part of the waste certification program for WIPP to ensure the AK information is compiled in an auditable record, the facility and MTRUW management operations are described and correlated to specific waste stream information, prohibited wastes are identified and segregated, discrepancies in AK are resolved, and the appropriate EPA Hazardous Waste Numbers are assigned.

Real-Time Radiography [20.4.1 NMAC § 264.13(b)(2), and 20.4.1 NMAC § 270.14(b)(2)]
RTR is a nondestructive, qualitative, and semi quantitative assay technique that involves x-ray scanning of waste containers to identify and verify, using appropriate equipment and qualified operators, the physical form(s) of waste container contents. RTR will be used to verify the absence of free liquids and prohibited items and that the physical form requirements of the WIPP WAC are met. At the same time, RTR will verify the waste classification (i.e., Summary Category Group) and waste form determined using AK. MTRUW containers will be analyzed by RTR as required by the WIPP WAC and conditions contained in the CCP TRU Waste Certification Plan or most recent revisions. An RTR data form will be used to document the types and quantities of material types observed in each container.

A radiography system routinely consists of an x-ray producing device, an imaging system, an enclosure for radiation protection, a waste container-handling system, an audio/video recording system, and an operator control and data acquisition station. Operating parameters such as the intensity of the x-ray can be varied for optimum viewing of the interior of the waste container. The imaging system typically utilizes an image intensifier, television camera, and remotely-located television screen. Instrument configurations will vary depending on manufacturer and site usage.

During operation of the system, the waste container is scanned while the operator views and permanently records the image from the television screen on audio/videotape. The radiography data form is also used to document the materials present and other information about the containerized waste, as required by the WIPP permit.

The radiography image produced is examined for evidence of liquid materials by jogging the container or repetitively moving the container-handling system and searching for evidence of wave motion in addition to observing the container contents for suspect waste items. The container

contents are also observed for items that confirm the waste classification of the container. Conditions that limit or interfere with this determination are noted.

Operator training and experience are important considerations for assuring the quality of the radiography data. Only properly trained personnel are allowed to operate radiography equipment. Standardized training requirements for radiography operators are based upon existing industry standard training requirements. Radiography operators receive formal and on-the-job training in project requirements, system operations and standards, safe operating practices, application techniques, specific waste-generating practices, packaging configurations, parameter estimation, and identification of prohibited items. Operators must be trained and tested before they are qualified for RTR operation, and must requalify at least every two years. CCP operating and training requirements for RTR analysis of MTRUW are based on Attachment B1, "Waste Characterization Sampling Methods," Section B1-3, "Radiography" (NMED, 2002 or most recent version).

Visual Examination [20.4.1 NMAC § 264.13(b)(2), and 20.4.1 NMAC §270.14(b)(2)]
The contents of select MTRUW containers may be visually examined in lieu of RTR. Visual examination will also verify aspects of AK amenable to visual confirmation. For example, the visual examination will verify the physical characteristics of a waste and the associated Summary Category Group (i.e., Summary Category Group S3000, S4000, or S5000). In addition, visual examination will verify the presence of certain hazardous constituents, such as lead in lead bricks or lead-lined gloves. These types of visual confirmations will either verify or refute the overall AK used to characterize the waste stream.

The contents of each container undergoing visual examination will be provided on a visual examination data form. Visual examination procedure operators receive formal and on-the-job training in project requirements, safe operating practices, specific waste-generating practices, packaging configurations, waste parameter estimation, and identification of prohibited items. Operators must be trained and qualify for visual examination procedures and must requalify at least every two years. CCP operating and training requirements for visual examination of MTRUW are based on Attachment B1, "Waste Characterization Sampling Methods," Section B1-3b(3), "Visual Examination" (NMED, 2002 or most recent version).

Headspace Gas Sampling [20.4.1 NMAC §§ 264.13(b)(2) and (3), and 20.4.1 NMAC § 270.14(b)(2)]

Headspace gas sampling and analysis is a qualitative screening technique used to confirm the presence of certain regulated hazardous constituents. This method of characterization includes representative sampling and analysis of headspace gas from the container headspace of randomly selected MTRUW containers. This data will be used to resolve the assignment of Hazardous Waste codes and to verify AK characterization data. Headspace gas sampling will not be relied upon to prove the absence of a hazardous constituent in a waste.

The precision, accuracy, and representativeness of headspace gas samples will be evaluated for adherence to the QAPjP QA objectives through analysis of field QC samples and adherence to QC practices. Sampling and analysis methods for the determination of VOCs in the headspace of MTRUW containers must meet the requirements in the WIPP WAP.

Solid Waste Sampling and Analysis

MTRUW homogenous solid wastes are not currently sampled or analyzed at LANL except for waste treated at the TA-55 cementation unit as described in the most recent version of the LANL General Part B (LANL, 2003). This characterization activity for other MTRUW is performed at an off-site facility under the CCP program. If at a future date sampling and/or analytical operations are to be implemented at LANL, these operations will be conducted under the CCP program with approved CCP procedures.

~~Characterization of the hazardous component of MTRUW stored and treated at LANL and destined for disposal at WIPP is performed in accordance with the procedures described in the WIPP Hazardous Waste Facility Permit. The following summarizes these requirements, as presented in the "Los Alamos National Laboratory Transuranic Waste Quality Assurance Project Plan" (QAPjP) (LANL, 2003). MTRUW not destined for WIPP is characterized as described in Section C.3.2.2 of this WAP. All MTRUW will undergo characterization review to determine its prohibition status with regard to the land disposal restrictions of 40 CFR Part 268.~~

~~Initial characterization of both homogeneous and heterogeneous MTRUW is based primarily on AK. Additional characterization to meet WIPP certification procedures will be implemented at appropriate LANL or other facilities to meet requirements of the WIPP WAP permit conditions.~~

~~Pursuant to WIPP certification and WIPP WAP requirements, further characterization of homogeneous waste will be accomplished through statistically-based sampling and analysis, headspace gas sampling, RTR, and visual examination. Further characterization of heterogeneous waste will be implemented at appropriate LANL or other facilities using AK, headspace gas sampling, RTR, and visual examination. MTRUW not destined for WIPP but stored at LANL is characterized using the routine procedures used for hazardous waste and MLLW, as discussed in Section C.3.2.2.~~

~~The MTRUW streams described in Section C.1.2.3 are categorized by Summary Category Groups based on the physical and chemical form of the waste. Homogeneous waste streams in the solid process residue (Summary Category Group S3000), soil/gravel (Summary Category Group S4000), or aqueous liquids/slurries (Summary Category Group L1000) categories may contain RCRA-regulated VOCs, SVOCs, and metals and will be characterized using AK and/or sampling and analysis. Debris waste streams (Summary Category Group S5000) consist of heterogeneous materials and, as such, it is difficult to obtain representative samples of these wastes. Therefore, debris waste will be characterized for the presence of hazardous components using AK based on examination of the original materials and operations from which the waste was generated, followed by RTR, visual examination, and headspace gas sampling.~~

~~MTRUW stored at Area G that has been identified as containing free liquids will be managed with without secondary containment must contain no free liquids.~~

~~The QAPjP referenced above addresses MTRUW characterization procedures to be utilized after the waste is stored at LANL. These procedures were developed primarily to meet the off-site WAC. LANL's use of these procedures is designed to allow appropriate waste characterization information obtained for storage to serve as a basis for or to supplement future characterization needs without a duplication of effort. Because the QAPjP and other WIPP permit-derived documents addressing MTRUW characterization are subject to change as new information is provided, developed, or approved, and because LANL is not subject to their requirements in LANL's operating permit for storage, but rather utilizes them as waste management guidelines, this WAP will not be modified as ongoing changes to the referenced documents occur.~~

~~LANL has prepared a records inventory and disposition schedule for all waste characterization data and related QA/QC records for MTRUW to be shipped to WIPP. These documents will be maintained in the Facility operating record until the Department has approved the closure certification statements for the applicable permitted storage unit in Area G.~~

~~C.3.2.1 LANL TRU Waste Certification Plan~~

~~The LANL TRU Waste Certification Plan (LANL, 2002) incorporates the certification requirements of the "Waste Acceptance Criteria for the Waste Isolation Pilot Plant" (WIPP WAC) (DOE, 2002a or most recent version) for MTRUW that will be sent to that site. It establishes the programmatic framework and requirements within which waste generators operate to ensure that their wastes can be certified as meeting the sampling, characterization, and packaging requirements of the WIPP WAC. These include LANL site-specific documents and procedures by which the waste stream analytical data and other AK information are evaluated. Once this documentation has been prepared, it is subject to review and approval by certification program personnel. Waste generators also participate in external audits, as required by the QAPjP and the LANL TRU Waste Certification Plan, to verify the characterization and certification process. If the requirements of the WIPP WAC and the "TRUPACT-II Authorized Methods for Payload Control" (DOE, 2002b) are met, the waste will be certified and transported to WIPP.~~

~~C.3.2.1.1 Acceptable Knowledge~~

~~AK characterization procedures for MTRUW stored at LANL prior to certification for WIPP acceptance are the same as those described in Section C.3.1.1. The QAPjP (LANL, 2003) describes how LANL ensures compliance with the WIPP requirements associated with the compilation, confirmation, and administrative controls of AK information. LANL-specific procedures consistent with the WIPP WAP are used to implement AK as part of the LANL TRU waste certification program for WIPP to ensure the AK information is compiled in an auditable record, the facility and MTRUW management operations are described and correlated to specific waste stream information, prohibited wastes are identified and segregated, discrepancies in AK are resolved, and the appropriate EPA Hazardous Waste Numbers are assigned.~~

~~C.3.2.1.2 Real-Time Radiography [20.4.1 NMAC § 264.13(b)(2), and 20.4.1 NMAC § 270.14(b)(2)]~~

~~RTR is a nondestructive, qualitative, and semiquantitative assay technique that involves x-ray scanning of waste containers to identify and verify, using appropriate equipment and qualified operators, the physical form(s) of waste container contents. RTR will be used to verify the absence of free liquids and prohibited items and that the physical form requirements of the WIPP WAC are met. At the same time, RTR will verify the waste classification (i.e., Summary Category Group) and waste form determined using AK. MTRUW containers will be analyzed by RTR as required by the WIPP WAC and conditions contained in the CCP TRU Waste Certification Plan or most recent revisionsAll MTRUW containers will be analyzed by RTR, and the results for each waste container will be documented. An RTR data form will be used to document the types and quantities of material types observed in each container.~~

~~A radiography system routinely consists of an x-ray producing device, an imaging system, an enclosure for radiation protection, a waste container-handling system, an audio/video recording system, and an operator control and data acquisition station. Operating parameters such as the intensity of the x-ray can be varied for optimum viewing of the interior of the waste container. The imaging system typically utilizes an image intensifier, television camera, and remotely-located television screen. Instrument configurations will vary depending on manufacturer and site usage.~~

~~During operation of the system, the waste container is scanned while the operator views and permanently records the image from the television screen on audio/videotape. The radiography data form is also used to document the materials present and other information about the containerized waste, as required by the WIPP permit.~~

~~The radiography image produced is examined for evidence of liquid materials by jogging the container or repetitively moving the container-handling system and searching for evidence of wave motion in addition to observing the container contents for suspect waste items. The container contents are also observed for items that confirm the waste classification of the container. Conditions that limit or interfere with this determination are noted.~~

~~Operator training and experience are important considerations for assuring the quality of the radiography data. Only properly trained personnel are allowed to operate radiography equipment. Standardized training requirements for radiography operators are based upon~~

~~existing industry standard training requirements. Radiography operators receive formal and on-the-job training in project requirements, system operations and standards, safe operating practices, application techniques, specific waste-generating practices, packaging configurations, parameter estimation, and identification of prohibited items. Operators must be trained and tested before they are qualified for RTR operation, and must requalify at least every two years. LANL operating and training requirements for RTR analysis of MTRUW are based on Attachment B1, "Waste Characterization Sampling Methods," Section B1-3, "Radiography" (NMED, 2003).~~

~~C.3.2.1.3 Visual Examination [20.4.1 NMAC § 264.13(b)(2), and 20.4.1 NMAC §270.14(b)(2)]~~

~~The contents of select MTRUW containers will be visually examined to confirm RTR results, or visual examination may be used in lieu of RTR. Visual examination will also verify aspects of AK amenable to visual confirmation. For example, the visual examination will verify the physical characteristics of a waste and the associated Summary Category Group (i.e., Summary Category Group S3000, S4000, or S5000). In addition, visual examination will verify the presence of certain hazardous constituents, such as lead in lead bricks or lead-lined gloves. These types of visual confirmations will either verify or refute the overall AK used to characterize the waste stream.~~

~~The contents of each container undergoing visual examination will be recorded on audio/videotape and a description of the observed items must be provided on a visual examination data form. Visual examination procedure operators receive formal and on-the-job training in project requirements, safe operating practices, specific waste-generating practices, packaging configurations, waste parameter estimation, and identification of prohibited items. Operators must be trained and qualify for visual examination procedures and must requalify at least every two years. LANL operating and training requirements for visual examination of MTRUW are based on Attachment B1, "Waste Characterization Sampling Methods," Section B1-3b(3), "Visual Examination" (NMED, 2003).~~

~~The hypergeometric distribution is a statistical means of estimating the probability of determining the true number of miscertified containers in the overall population of waste containers by selecting a number of containers for visual examination using a previously determined or observed miscertification rate and a set confidence factor. The basis for the~~

~~determination of the number of appropriate containers to be visually examined and a description of the hypergeometric distribution used is available in the WIPP permit, Attachment B2, "Statistical Methods Used in Sampling and Analysis," Section B2-1, "Approach for Statistically Selecting Waste Containers for Visual Examination" (NMED, 2003). The following table is an example of how the number of MTRUW containers to be randomly selected for visual examination will be determined. The selection process will be updated as necessary to maintain consistency with revisions of the WIPP permit.~~

~~Number of Waste Containers Requiring Visual Examination:~~

~~Annual Number of Waste Containers Undergoing Characterization~~	~~Number of Waste Containers Requiring Visual Examination~~					
~~50~~	~~22~~	~~22~~	~~22~~	~~22~~	~~29~~	~~29~~
~~100~~	~~15~~	~~24~~	~~24~~	~~33~~	~~33~~	~~41~~
~~200~~	~~15~~	~~26~~	~~26~~	~~35~~	~~44~~	~~52~~
~~300~~	~~15~~	~~26~~	~~26~~	~~35~~	~~44~~	~~53~~
~~400~~	~~15~~	~~26~~	~~26~~	~~36~~	~~45~~	~~54~~
~~500~~	~~15~~	~~26~~	~~26~~	~~36~~	~~45~~	~~63~~
~~Percent of Waste Containers Miscertified to WIPP WAC by Radiography in Previous Year~~	~~1 percent~~	~~2 percent~~	~~3 percent~~	~~4 percent~~	~~5 percent~~	~~6 percent~~

~~LANL uses the miscertification rate observed at LANL in the previous year to determine the appropriate number of containers for visual examination.~~

~~C.3.2.1.4 Headspace Gas Sampling [20.4.1 NMAC §§ 264.13(b)(2) and (3), and 20.4.1 NMAC § 270.14(b)(2)]~~

~~Headspace gas sampling and analysis is a qualitative screening technique used to confirm the presence of certain regulated hazardous constituents. This method of characterization includes sampling and analysis of headspace gas from the container headspace. In order to meet the characterization requirements in the WIPP permit, the headspace of all containers in storage will be sampled and analyzed as the containers are characterized for shipment to WIPP. Headspace gas sampling will not be relied upon to prove the absence of a hazardous constituent in a waste.~~

~~The precision, accuracy, and representativeness of headspace gas samples will be evaluated for adherence to the QAPjP QA objectives through analysis of field QC samples and adherence~~

~~to QC practices. Sampling and analysis methods for the determination of VOCs in the headspace of MTRUW containers must meet the requirements in the WIPP WAP.~~

~~C.3.2.1.5 Solid Waste Sampling and Analysis~~

~~The following describes the methods for collecting samples of MTRUW classified as homogeneous solids or soils. Sampling protocol is based on requirements in the WIPP WAP. These sampling methods are similar to those approved by EPA for solid waste and soil sampling in the most recent version of *SW-846*; in "Standard Practice for Thin-Walled Tube Sampling of Soils" (ASTM, 1983); and in "Standard Practice for Sampling Waste and Soils for Volatile Organic Compounds" (ASTM, 1991). These methods are designed to ensure that representative waste samples are consistently collected and transferred to the responsible laboratory in a manner that maintains sample integrity.~~

~~The MTRUW classified as homogeneous solids or soils is packaged as a monolith in waste containers or in smaller containers within the outermost waste container. For waste containers selected for sampling that contain multiple small containers, one of the small containers will be randomly selected for sampling. Waste parameters for which homogeneous solids or soils are analyzed are listed in Table C-18.~~

~~To accomplish sampling of these wastes, the techniques described below have been developed for sample collection. The methods used to collect samples from the monolithic waste containers or smaller containers must be such that the samples are representative of the waste from which they are taken. For containers of monolithic homogeneous solids or soils, a sample must be collected as a core that is representative of the waste along the entire depth of the waste in the container.~~

~~Sample Core Collection~~

~~Coring tools must be used to collect cores of homogeneous solids or soils from waste containers in a manner that minimizes disturbance to the core. A rotational coring tool (i.e., a tool that is rotated longitudinally), similar to a drill bit, must be used to cut, lift the waste cuttings, and collect a core sample from containers of waste. For homogeneous solids or soils that are relatively soft, nonrotational coring tools will be used in lieu of a rotational coring tool. Requirements for coring tools are presented in the WIPP WAP.~~

~~Statistical Approach for Selection of Homogeneous Waste Containers~~

~~A statistical approach will be used to select homogeneous waste containers for solid waste sampling and analysis of solid process residue and soil waste streams. This approach relies on the premise that the waste containers have been separated into waste streams on the basis of AK and, thus, represent populations that contain similar waste. The specific method for calculating the number of drums for sampling is found in the WIPP permit. Waste containers within each waste stream and sample locations within each container will be randomly selected to ensure that the analytical results provide an unbiased estimate of the true mean contaminant concentration for each waste stream.~~

C.3.2.2 Non-WIPP Mixed TRU Waste Characterization

MTRUW may be generated, re-characterized, or accepted at LANL that is not currently destined for characterization and shipment to WIPP and subject to the WIPP certification requirements. Examples of this type of waste stream are MTRUW that is not generated by defense programs and items that are not compliant with the WIPP WAC.

Characterization procedures for these types of wastes will consist of the same procedures as those described for hazardous waste and MLLW in Section C.3.1 of this plan. These wastes will be characterized using AK and/or sampling and analysis on the same basis as discussed in Section C.3. AK for these wastes can also include additional AK verification procedures for MTRUW, as discussed in Section C.3.2.1, depending on the waste type.

C.3.2.3 Characterization Procedures for Treatment of Mixed TRU Wastes

This section presents waste analysis information specific to treatment in the cementation unit at TA-55. It addresses only the hazardous component of mixed waste treated in the cementation unit.

The cementation unit is a Subpart X miscellaneous unit pursuant to 20.4.1 NMAC, Subpart 500, Part 264, Subpart X [6-14-00], and is used to treat liquid and solid mixed wastes by stabilization in cement to form a noncorrosive solid matrix. The cementation unit is located in Glovebox GB-454 along the west wall of TA-55, Building 4 (TA-55-4), in Room 401, and consists of a pH adjustment column, vacuum trap, two motor-driven mixers, four impellers, associated support structures, a glovebox, and piping.

The cementation unit treats homogeneous liquid and solid mixed waste generated primarily from R&D and processing and recovery operations at TA-55 and at the Chemistry and

Metallurgy Research Building at TA-3. The liquid wastes (Summary Category Group L1000) generally consist of evaporator bottoms solutions and laboratory solutions that may exhibit the hazardous characteristics of corrosivity and toxicity for metals (including arsenic, barium, cadmium, chromium, lead, mercury, and silver), as defined in 20.4.1 NMAC §§ 261.22 and 261.24 [6-14-00], respectively. The homogeneous solid process wastes (Summary Category Group S3000) generally consist of process residue from the evaporator, process leached solids, filter cake, and other miscellaneous solids. This waste stream typically exhibits the hazardous characteristics of toxic metals. These waste streams will be mixed with cement in 55-gallon drums and allowed to cure into a noncorrosive solid matrix. Table C-19 provides a description of the waste streams associated with the cementation unit and identifies their potentially applicable EPA Hazardous Waste Numbers. The resulting cemented waste is identified by Summary Category Group S3000 and typically carries the Waste Matrix Code S3100. A general description of the Summary Category Groups and WMCs is provided in Section C.1.2.3.

C.3.2.3.1 Characterization Procedures for Waste to Be Treated by Cementation

Chemical and physical characterization is performed prior to treatment of MTRUW, in accordance with 20.4.1 NMAC § 264.13 [6-14-00]. Documented AK, as described in Section C.3.1.1, is used to determine whether the waste stream is regulated as a hazardous waste. Process knowledge and/or chemical analytical data will be utilized to adequately characterize the MTRUW prior to cementation. If process information is not sufficient, the wastes to be treated by cementation may be periodically sampled and analyzed for pH and for TC metals listed in 20.4.1 NMAC § 261.24 [6-14-00] to establish a baseline, as appropriate. Based on documented AK, these wastes do not contain VOCs or SVOCs. Parameters and analytical methods for specific hazardous constituents are presented in Table C-18.

To ensure that proper procedures and considerations for sample collection and preservation, QA/QC, and occupational safety and health are followed, personnel involved in sampling and analysis of MTRUW at TA-55 will comply with the LANL-specific protocol consistent with the most recent version of *SW-846*. For purposes of collecting a representative sample of MTRUW, the sample will be collected and handled in a manner that preserves its original physical form and composition and prevents contamination or changes in concentration of the parameters to be analyzed. Specific information relative to sampling, parameters, and analytical methods is outlined in Tables C-11 and C-18. Reevaluation frequency is addressed in Section C.3.

C.3.2.3.2 Characterization Procedures for Waste Treated by Cementation

The treated cemented waste will be shipped to WIPP for disposal. Therefore, the treated waste will be characterized in accordance with the LANL QAPjP (LANL, 2003), which incorporates the characterization requirements of the WIPP WAP for waste to be shipped to WIPP. QAPjP characterization procedures for the treated wastes also meet the RCRA waste analysis requirements of 20.4.1 NMAC § 264.13(a) [6-14-00].

C.3.2.4 Sample Handling, Preservation, and Storage

Table C-15 presents the most recent *SW-846* requirements regarding sample containers, preservation techniques, and holding times associated with sample collection. Sampling personnel adhere to these requirements to ensure that sampling and analysis meet quality objectives for data.

C.3.2.5 Analytical Laboratory Selection and Analytical Methods

Analytical laboratory selection and methods for the purpose of certifying MTRUW for transportation to WIPP must be certified to the requirements of the WIPP WAP. For wastes to be stored at LANL, analytical laboratories at LANL and/or approved subcontractor laboratories will perform the detailed qualitative and quantitative chemical analyses specified in Table C-18 of this WAP. These laboratories must have:

- The capability of handling TRU waste
- A documented comprehensive QA/QC program
- Technical analytical expertise
- A document control/records management plan
- The capability to perform data reduction, validation, and reporting.

The selection and development of analytical testing methods for LANL MTRUW streams were based on the following considerations:

- The physical form of the waste
- Analytes of interest
- Information requirements (e.g., verify compliance with LDR treatment standards, waste classification).

Collectively, these factors contributed to the selection of the analytical methods specified in Table C-18. Qualified analytical laboratories at LANL and/or approved subcontractor laboratories that meet the above criteria will be used for the required analytes.

C.3.3 Remediation Waste Characterization

Remediation waste is defined in 20.4.1 NMAC § 260.10 as all solid and hazardous waste, and all media and debris, which contain listed hazardous wastes or which themselves exhibit a hazardous waste characteristic, that are managed for the purposes of implementing corrective action requirements. At LANL, ER Project remediation wastes are generated from a wide variety of activities, including, but not limited to, site investigations, corrective actions (e.g., interim actions, interim measures, voluntary corrective actions, voluntary corrective measures, and corrective measures study/corrective measures implementation), drilling projects, closures, and D&D activities. These remediation wastes consist primarily of contaminated soil and structural debris. Investigation-derived waste, a subset of remediation wastes, may include small amounts of samples, personal protective equipment, contaminated sampling supplies, plastic, environmental media (e.g., drill cuttings and/or core material, well development and purge waters), and decontamination fluids.

The Laboratory's ER Project has developed two standard operating procedures (SOP) to fully address characterization of remediation waste, which form the basis for the information provided in this WAP. The SOPs are subject to change and the following discussion is provided for information purposes only. The SOPs are "Management of Environmental Restoration Project Waste," ER-SOP-01.06 (LANL, 2001a), which describes the process for managing ER Project waste generated during corrective action, and "Waste Characterization," ER-SOP-01.10 (LANL, 2001b), which describes the development of a strategy for characterizing wastes generated during specific corrective action-related activities implemented by the ER Project. These SOPs provide specific, mandatory, and uniform procedures for managing and characterizing remediation waste and incorporate, by reference, the most current version of Laboratory Implementation Requirements (LIR) and Laboratory Implementation Guidance (LIG) associated with waste management.

ER-SOP-01.06 provides definitions and references for all types and categories of waste, corresponding waste documentation, waste management personnel, and applicable ER Project policies. The SOP describes training requirements for any ER Project personnel managing

waste, and references ER-SOP-01.10 for the completion of a Waste Characterization Strategy Form (WCSF).

ER-SOP-01.10 identifies the steps involved in waste identification and characterization as delineated by Laboratory requirements, and provides instructions for completing a WCSF. A WCSF must be completed by ER Project personnel and subsequently reviewed and approved by appropriate personnel prior ER Project waste generation. The WCSF process for ER Project remediation waste is used in conjunction with current LIRs and LIGs associated with waste characterization and management, and with the Laboratory's current WAC document.

Completion of a WCSF includes the following steps:

- Identify potential wastes to be generated by the proposed activity through reviewing historical site information, including previously developed ER Project data and reports regarding the project site.
- Determine whether the existing data and/or documentation for the waste stream fulfill the criteria for AK specified in LIG 404-00-02, "Acceptable Knowledge Guidance."
- If the existing data do not fulfill the AK criteria specified in the LIG, develop a waste analysis suite and select test methods appropriate to identify and quantify potential contaminants. If the existing data are partially useful, develop a sampling and analysis strategy that will complete the characterization for the waste stream. If the existing data provide no useful information, develop a sampling and analysis strategy that will identify and quantify all potential constituents of concern in the waste stream.
- Identify preliminary classifications of wastes to be generated. Classifications include, but are not limited to, radioactive (including low-level and mixed low-level), RCRA solid or hazardous, polychlorinated biphenyl, and special. Wastes may be combinations of these classifications.
- List the anticipated amount of waste, by classification, to be generated as part of the ER Project activity.
- List packaging requirements.

The WCSF for a specific ER Project site or activity is amended when a new waste type or classification not previously identified on the form is to be generated or there are changes in planned field activities. Once approved, the amendment becomes part of the original WCSF. The WCSF, with instructions on its completion, is included in ER-SOP-01.10.

The information provided in a WCSF is used to aid the classification of waste generated by an ER Project activity. Waste characterization documentation is prepared for each type of waste

generated and is used to document the actual characterization of a specific waste stream described in the WCSF.

Remediation waste will be characterized to fully comply with all applicable ~~Hazardous Waste Permit~~ waste characterization requirements, as appropriate under this Permit.

C.4 OFF-SITE WASTE ACCEPTANCE PROCEDURES [20.4.1 NMAC §§ 264.13(a)(3)(ii) and (a)(4); 264.13(b)(5); and 264.13(c)]

This section discusses general waste acceptance procedures that will be used when hazardous or mixed waste is accepted from off-site waste-generating facilities. These procedures will be used to meet the requirements of 20.4.1 NMAC §§ 264.13(a)(3)(ii), 264.13(a)(4), 264.13(b)(5), and 264.13(c) [6-14-00]. Table 2-2 of the General Part B Permit Renewal Application (LANL, 2003) lists off-site waste-generating facilities that may send waste to LANL. Specific descriptions of the waste streams to be received by LANL from these facilities and the appropriate waste characterization documentation and acceptance procedures are included in Supplement 1 of this General Part B Permit Renewal Application. The basis for characterization of waste streams to be accepted by LANL is generator documentation of the waste. For off-site waste, all of LANL's routine waste characterization documentation will, at a minimum, be collected from the generator and reviewed for completeness and accuracy by LANL in accordance with standard procedures. Off-site preshipment inspection of the waste will be used to examine the waste and its documentation, if the information provided by the generator is insufficient to meet LANL WAC.

Uniform Hazardous Waste Manifests and LDR Notification Forms, as applicable, will be prepared for each shipment of off-site hazardous or mixed waste to LANL and verified by LANL waste management personnel. Upon receipt at LANL, waste shipments will be physically examined for correct documentation, presence and correctness/completeness of waste container identification and labeling, and conformance with LANL container types and waste compatibility for storage and segregation, as appropriate. Upon discovering a significant discrepancy, the Permittee must attempt to reconcile the discrepancy with the waste generator or transporter. If the discrepancy is not resolved within 15 days after receiving the waste, the Permittee must immediately submit to the Department a letter describing the discrepancy and attempts to reconcile it, and a copy of the manifest or shipping paper at issue (40 CFR § 264.72(b))~~If discrepancies are found, the Department will be notified of the discrepancy within~~

~~five days, and the waste will be returned to the off-site generator within 90 days, unless the generator provides an acceptable resolution to the discrepancy within 90 days after receipt of the waste~~.

If TA-54 accepts hazardous waste from an off-site facility, each shipment is inspected and analyzed as necessary to determine that it matches the waste identified on the waste manifest. These requirements are reiterated under LDR.

Additional waste characterization activities in support of WIPP certification will generally be the purpose of MTRUW shipments to LANL from off site, and discrepancies may become apparent as part of characterization, as described in Section C.3.2. Resolution of such discrepancies will be performed in accordance with the procedures contained in each analytical method in conformance with the WIPP permit.

C.5 SPECIAL PROCEDURAL REQUIREMENTS [20.4.1 NMAC § 264.13(b)(6)]

Waste management requirements specific to ignitable, reactive, and incompatible waste, as well as for compliance with LDR and Subpart CC regulations, are described below.

C.5.1 Procedures for Ignitable, Reactive, and Incompatible Wastes to be Stored

Pursuant to 20.4.1 NMAC § 264.17 [6-14-00], specific waste management procedures for ignitable, reactive, and incompatible wastes to be stored are described as follows. These waste management methods vary depending on the physical form and type of waste managed. To ensure that these wastes are managed safely and properly, their characteristics are identified and documented as described in Section C.3, they are labeled appropriately, and the waste types are physically segregated within each container storage unit. Wastes are segregated and stored, as appropriate, by their physical characteristics (i.e., liquids or solids) and according to the following compatibility groups: (1) flammables/ignitables; (2) oxidizers; (3) corrosive acids; (4) reactive with water; (5) corrosive bases; (6) other reactives; and (7) other wastes.

C.5.2 Procedures for Ignitable, Reactive, and Incompatible Wastes to be Treated

Waste management procedures for ignitable, reactive, and incompatible wastes to be treated will be followed pursuant to 20.4.1 NMAC § 264.17 [6-14-00]. LANL personnel will take the necessary precautions to prevent accidental ignition or reaction of wastes to be treated by OB or OD. LANL relies on SOPs, hazard control plans, and other formal procedures for specific safety and handling associated with the treatment of HE waste and HE-contaminated waste.

This includes, but is not limited to, the segregation of these wastes according to compatibility groups and by the physical nature of the waste (i.e., liquids and solids).

The treatment of these wastes by OB or OD is an appropriate treatment method under RCRA. It is necessary to mitigate the ignitable and/or reactive hazards associated with HE waste and HE-contaminated waste and is the preferred waste management practice for health and safety concerns.

The cementation unit will not treat ignitable, reactive, or incompatible mixed waste.

C.5.3 Procedures to Ensure Compliance with LDR Requirements [20.4.1 §§ 268.7(a) and 268.7(b)(3), (4), and (5)]

The LDRs contained in 20.4.1 NMAC, Subpart 800, Part 268, identify hazardous wastes restricted from land disposal; define those circumstances under which an otherwise prohibited waste may continue to be placed on or in a land treatment, storage, or disposal unit; specify treatment standards; and describe testing, tracking, and recordkeeping requirements for generators and TSDFs. This section describes the approach used by LANL treatment and storage facilities to comply with LDR requirements.

The characterization documentation for all waste streams to be treated or stored on-site is reviewed as described in Section C.3. The documentation is evaluated:

- To ensure that appropriate EPA Hazardous Waste Numbers and UHCs exceeding treatment standards are identified and that the wastes are accompanied by generator notifications/certifications, if required by 20.4.1 NMAC § 268.7(a).
- To determine whether the waste is exempt or excluded, already meets the treatment standards, or must be treated on site, off site, or both to meet all treatment standards.
- To identify the appropriate TSDF to which the waste will next be sent.

LANL maintains the waste characterization data and other records, as specified in Section C.3.

If waste is to be treated on site to meet the LDR requirements, the treatment unit must comply with the testing and reporting requirements of 20.4.1 NMAC § 268.7(b). ~~LANL will identify and document ahead of treatment all waste whose treatment goal it is to meet the LDR requirements.~~ After treating the waste, the treated waste/residue is evaluated to determine whether all treatment standards have been met. The treatment standards are defined in 20.4.1

NMAC §§ 268.40, 268.45, 268.48, or 268.49, depending on the type of waste treated. Residues from wastes with concentration-based treatment standards are analyzed by the appropriate methods described in Section C.3.1.2 to assure that the waste meets applicable treatment standards. For wastes or contaminated soil with treatment standards expressed by the waste extract, the TCLP procedures described in Sections C.3.1.2.1 or C.3.1.2.2 will be used.

The treatment facility prepares the certifications appropriate to excluded debris treated to 20.4.1 NMAC § 268.45 alternative standards, soil treated to 20.4.1 NMAC § 268.49 standards, characteristic wastes for which all characteristics have been treated and all Universal Treatment Standards have been met, characteristic wastes for which all characteristics have been treated but not all treatment standards are achieved, and/or other special certifications required for materials such as soil. New waste characterization documentation, incorporating the treatment facility paperwork requirements of 20.4.1 NMAC § 268.7(b) or the generator paperwork requirements of 20.4.1 NMAC § 268.7(a) if the residue is considered a newly-generated waste or is being shipped to another TSDF, is prepared for the treated waste/residue, as appropriate. The certifications/notifications and waste characterization documentation are used to determine where the waste will be sent for further treatment, storage, or disposal. The appropriate 20.4.1 NMAC § 268.7(a) notifications are prepared before sending any waste subject to LDR to an off-site TSDF. Most receiving facilities have their own WAC requirements, specifying how the LDR information will be submitted. The receiving facilities usually require that analytical data be provided before the waste is shipped to ensure the waste meets their WAC. Waste may be sent to TA-54 or other LANL storage units after treatment or directly off-site from the treatment facility.

For wastes received from off-site, LANL will require an LDR notification that addresses all LDR requirements applicable to the specific waste type. If off-site wastes are treated at LANL, LANL will comply with the requirements of 20.4.1 NMAC §268.7(b), as discussed above.

As a permitted storage facility, LANL must comply with the 20.4.1 NMAC, Subpart VIII, Part 268, Subpart E, prohibitions on storage. Generally, wastes subject to LDR can be stored no longer than one year. However, the LDRs provide relief from the storage prohibition for wastes that have received a variance or waiver from treatment or have no practical disposal alternative. Other rulemaking may also exempt waste from LDR. The 1992 Federal Facility Compliance Act

(Pub.L. 102-386, 106 Stat. 1505) exempts LANL's mixed waste from the storage prohibitions under 20.4.1 NMAC, Subpart VIII, Part 268, so long as LANL is in compliance with a state-issued order and Site Treatment Plan (STP). NMED issued LANL an FFCO and approved an STP setting forth schedules for LDR compliance. While LANL is in compliance with its FFCO and STP the storage prohibition under 20.4.1 NMAC, Subpart VIII, Part 268 does not apply to mixed waste covered by the FFCO. However, to determine the applicability of the storage prohibition and because LANL must comply with the 20.4.1 NMAC, Subpart VIII, § 268.3 prohibitions on dilution, LANL will characterize all hazardous wastes, including mixed waste covered by the FFCO, to determine its prohibition status with regard to the land disposal restrictions of 40 CFR Part 268.

C.5.4 Procedures to Ensure Compliance with Subpart BB Requirements [40 CFR § 264.1052]

Equipment at the facility that is subject to specific requirements for test methods and procedures at 40 CFR Part 264, Subpart BB will comply as described below:

C.5.4.1 Requirements for Leak Detection and Monitoring [40 CFR § 264.1063(b) and (c)]

- Monitoring shall comply with Reference Method 21 at 40 CFR Part 60.
- The detection instrument shall meet the performance criteria of Reference Method 21.
- Reference Method 21 procedures shall be used to calibrate the detection instrument prior to each day it is used.
- Calibration gases shall be:
  - Less than 10 parts per million (ppm) of hydrocarbon in air; and,
  - methane or n-hexane mixed with air at approximately, but less than 10,000 ppm methane or n-hexane.
- All potential leak interfaces shall be measured as close to the interface as possible.
- For determining compliance with "no detectable emissions" requirements (40 CFR § 264.1054), all of the above requirements shall be met, as well as the following:
  - Background shall be determined pursuant to Reference Method 21.
  - The arithmetic difference between background and the maximum concentration detected shall be compared with 500 ppm.

C.5.4.2 Determination of Hazardous Waste Concentration

- Determination of whether hazardous waste contained in or in contact with the equipment is greater than or equal to 10% by weight organics shall be made using one of the following (40 CFR § 264.1063(d)):
  - ASTM Methods D 2267-88, E 169-87, E 168-88, E 260-85 (incorporated by reference under 40 CFR § 260.11);

- SW-846 Method 9060 or 8260 (incorporated by reference under 40 CFR § 260.11); or,
- acceptable knowledge with documentation (e.g., production process information, measurements from an identical process at another facility, etc).

- If concentration of the hazardous waste changes such that it is believed to be greater than 10% by weight organics, the determination shall be revised only after chemical analyses is performed in accordance with the methods listed above (40 CFR § 264.1063(e)).
- If the Secretary does not agree with the determination, chemical analyses using the methods listed above can be used to resolve the dispute (40 CFR § 264.1063(f)).
- Samples used to make this determination shall be representative of the highest total organic concentration expected (40 CFR § 264.1063(g)).

C.5.5 Procedures to Ensure Compliance with Subpart CC Requirements [40 CFR § 264.1082]

LANL waste streams described in this document may be subject to 40 CFR, Part 264, Subpart CC, "Air Emission Standards for Tanks, Surface Impoundments, and Containers," based on applicability criteria specified in 20.4.1 NMAC § 264.1080. For waste units that are not exempt from this Subpart under 20.4.1 NMAC §264.1080(b), LANL will address the applicable Subpart CC requirements. In addition, the exemption from standards specified in 20.4.1 NMAC §§ 264.1084 through 264.1087 can be demonstrated if the average VOC concentration is less than 500 parts per million by weight (ppmw) at the point of waste origination as described at 20.4.1 NMAC § 264.1082(c)(1). This determination shall be made in accordance with 20.4.1 NMAC § 264.1083 (a) and reviewed and updated as necessary at least every twelve months.

For waste management units that claim a 20.4.1 NMAC § 264.1082(c) exemption, the waste generator will document the determination for each waste stream. AK or process knowledge can be used to make the determination; however, if sampling and analysis is needed, it will be performed in accordance with the approved methods identified at 20.4.1 NMAC §§ 265.1084(a)(3)(iii)(A) through 265.1084(a)(3)(iii)(I), and listed in Tables A-11, A-12, and A-13. The characterization documentation will be reviewed prior to acceptance of the waste at TA-54, as discussed in Section A.3.

Characterization requirements for waste that has been treated to meet the exemptions allowed at 20.4.1 NMAC §§ 264.1082(c)(2) and (4) are summarized below. Details for specific treatment criteria and analytical requirements associated with each exemption can be found at the regulations cited.

- In accordance with 20.4.1 NMAC § 264.1082(c)(2)(i), waste is treated to reduce the volatile organic (VO) concentration to less than 500 ppmw that is measured in either a waste from a single point of origination or individual wastes from multiple points of origination commingled before treatment. The waste shall be analyzed prior to and after treatment pursuant to provisions at 20.4.1 NMAC 264.1083(b).
- In accordance with 20.4.1 NMAC § 264.1082(c)(2)(ii), waste is treated to reduce the VO concentrations by at least 95% and the treated waste VO concentration is ensured to be less than 100 ppmw. The waste shall be analyzed prior to and after treatment pursuant to provisions at 20.4.1 NMAC § 264.1083(b).

- In accordance with 20.4.1 NMAC § 264.1082(c)(2)(iii), waste is treated to remove VO mass greater than or equal to the VO mass that exceeded the 500 ppmw. The waste shall be analyzed prior to and after treatment pursuant to provisions at 20.4.1 NMAC § 264.1083(b).
- In accordance with 20.4.1 NMAC § 264.1082(c)(2)(v), waste is treated to reduce the VO concentration to less than the lowest VO concentration for all individual waste streams mixed together at the point of origin and less than 500 ppmw. The waste must be analyzed prior to and after treatment pursuant to provisions at 20.4.1 NMAC § 264.1083(a) and (b).
- In accordance with 20.4.1 NMAC § 264.1082(c)(2)(vi), waste is treated to reduce the VO concentration by 95% and each individual waste stream entering the treatment process is certified to be less than 10,000 ppmw. The waste shall be analyzed prior to and after treatment pursuant to provisions at 20.4.1 NMAC 264.1083(a) and (b).
- In accordance with 20.4.1 NMAC § 264.1082(c)(4), waste is treated to meet LDR standards, either concentration-based or technology-based. LDR compliance is determined for concentration-based using either analysis or AK.

~~LANL waste streams described in this document may be subject to 40 CFR, Part 264, Subpart CC, "Air Emission Standards for Tanks, Surface Impoundments, and Containers," based on applicability criteria specified in 40 CFR § 264.1080. For wastes that are not eligible for exemption under 40 CFR §264.1080(b), LANL will address the applicable Subpart CC characterization requirements. LANL requires that Subpart CC requirements be evaluated as part of the waste characterization process. Generator information is used to determine whether the concentration of VOCs in a waste stream at the point of generation is less than 500 parts per million by weight (ppmw), or is equal to or greater than 500 ppmw. The generator documents this determination for that waste stream. AK or process knowledge will be used to make this determination; however, if sampling and analysis is needed, it will be performed in accordance with the approved methods listed in Tables C-16, C-17, and C-18.~~

~~The characterization documentation for VOCs will be reviewed prior to acceptance of the waste at TA-54, as discussed in Section C.3. If process knowledge is insufficient, sampling and analysis of the waste will be required, in accordance with 20.4.1 NMAC §§ 265.1084(a)(2) through 265.1084(a)(4). Any hazardous waste that is newly-generated through the treatment or re-characterization of mixed waste will be characterized for the volatile organic content.~~

C.6 REFERENCES

ASTM, 1991, "Standard Practice for Sampling Waste and Soils for Volatile Organic Compounds," ASTM D4547-91, *Annual Book of ASTM Standards*, Philadelphia, Pennsylvania, American Society for Testing and Materials.

ASTM, 1983, “Standard Practice for Thin-Walled Tube Sampling of Soils,” ASTM D1587-83, *Annual Book of ASTM Standards*, Philadelphia, Pennsylvania, American Society for Testing and Materials.

DOE, 2002a, “Waste Acceptance Criteria for the Waste Isolation Pilot Plant,” *DOE/WIPP-02-3122*, Rev. 0.1, U.S. Department of Energy, Carlsbad Area Office, Carlsbad, New Mexico.

DOE, 2002b, “TRUPACT-II Authorized Methods for Payload Control,” TRAMPAC, Revision 19a.

DOE, 1999, “Radioactive Waste Management,” *DOE Order 435.1*, U.S. Department of Energy, Washington, D.C.

DOE, 1995, “DOE Waste Treatability Groups Guidance,” Revision 0.0, U.S. Department of Energy, Idaho Operations Office.

EPA, 1994a, “Waste Analysis at Facilities that Generate Treat, Store, and Dispose of Hazardous Wastes, A Guidance Manual,” *OSWER 9938.4-03*, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C.

EPA, 1994b, “Use of Total Waste Analysis in Toxicity Characteristic Determinations,” FAXBACK 13647, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C.

EPA, 1992, “Characterizing Heterogeneous Wastes: Methods and Recommendations,” U.S. Environmental Protection Agency, Environmental Systems Monitoring Laboratory, Office of Research and Development, Las Vegas, Nevada.

EPA, 1986 and all approved updates, “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,” *SW-846*, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, U.S. Government Printing Office, Washington, D.C.

LANL, 2003, “Los Alamos National Laboratory Transuranic Waste Quality Assurance Project Plan,” PLAN-00-001, R. 1, Los Alamos National Laboratory, Los Alamos, New Mexico.

LANL, 2003, “Los Alamos National Laboratory General Part B Permit Renewal Application,” Revision 2.0, August 2003, LA-UR-03-5923, Los Alamos National Laboratory, Los Alamos, New Mexico

LANL, 2002, “Los Alamos National Laboratory TRU Waste Certification Plan,” TWCP-PLAN-0.2.4-001, R.6, Los Alamos National Laboratory, Los Alamos, New Mexico.

LANL, 2001a, “Management of Environmental Restoration Project Waste,” ER-SOP-01.06, Los Alamos National Laboratory, Los Alamos, New Mexico.

LANL, 2001b, “Waste Characterization,” ER-SOP-01.10, Los Alamos National Laboratory, Los Alamos, New Mexico.

LANL, 1995a, “Report for the Characterization Review of Low-Level Mixed Waste,” Los Alamos National Laboratory, Los Alamos, New Mexico.

LANL, 1995b, “LANL’s Federal Facilities Compliance Order Site Treatment Plan Background Volume,” Los Alamos National Laboratory, Los Alamos, New Mexico.

NMED, 2003, Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit, NM 4890139088, November 26, 1999, as revised.

NMED, 1995, “Federal Facility Compliance Order (Los Alamos National Laboratory),” New Mexico Environment Department, Santa Fe, New Mexico.

Table C-1

Regulatory References and

Corresponding Waste Analysis Plan Location

Regulatory Citation(s)	Description of Requirement	Location in the Application Waste Analysis Plan
§264.13	General waste analysis	Throughout document
§264.13(a)(1)	A detailed chemical and physical analysis of a representative sample of the waste prior to treatment, storage, or disposal of the waste	B.2, B.3
§264.13(a)(2)	Analysis may include data developed under Part 261 and existing published or documented data on the hazardous waste or on hazardous waste generated from similar processes	B.3.1, B.3.2, B.3.3
§264.13(a)(3)	Analysis must be repeated as necessary to ensure that it is accurate and up to date	B.3.1, B.3.2, B.3.3
§264.13(a)(3)(i)	Analysis repeated when owner/operator has reason to believe that the process or operation generating the hazardous wastes, or nonhazardous wastes if applicable under § 264.113(d), has changed	B.3.1, B.3.2, B.3.3
§264.13(a)(3)(ii)	For off-site facilities, analysis repeated when the results of the inspection required in § 264.13(a)(4) indicate that the hazardous waste received at the facility does not match the waste designated on the accompanying manifest or shipping paper	B.4
§264.13(a)(4)	Owner/operator of an off-site facility must inspect and, if necessary, analyze each hazardous waste received to determine whether it matches the identity of the waste specified on the accompanying manifest or shipping paper	B.4
§264.13(b)	Development and implementation of waste analysis plan	Entire document
§264.13(b)(1)	Parameters for which each hazardous waste, or non-hazardous waste if applicable under § 264.113(d), will be analyzed and the rationale for selection of the parameters	B.2, Tables B-9, B-10, B-11, and B-12
§264.13(b)(2)	Test methods which will be used for the proposed parameters	B.3, Tables B-13, B-14, B-16, B-17, and B-18
§264.13(b)(3)	Sampling method which will be used to obtain a representative sample of the waste to be analyzed	B.3
§264.13(b)(3)(i)	Sampling methods described in Appendix I of Part 261	B.3.1, B.3.2, B.3.3
§264.13(b)(3)(ii)	An equivalent sampling method	B.3.1, B.3.2, B.3.3
§264.13(b)(4)	Frequency with which the initial analysis of the waste will be reviewed or repeated to ensure that the analysis is accurate and up to date	B.3.1, B.3.2, B.3.3

Table C-1 (Continued)

Regulatory Citation(s)	Description of Requirement	Location in the Waste Analysis Plan
§264.13(b)(5)	For off-site facilities, the waste analyses that hazardous waste generators have agreed to supply	B.4
§264.13(b)(6)	Where applicable, the methods to meet additional waste analysis requirements for specific waste management methods as specified in § 264.17 (ignitable, reactive, or incompatible), § 264.314 (bulk and containerized liquids), § 264.341 (waste analysis for incinerators), § 264.1034(d) (Subpart AA), § 264.1063(d) (Subpart BB), § 264.1083 (Subpart CC), and § 268.7 (Land Disposal Restrictions)	B.5
§264.13(b)(7)	The procedures and schedules for surface impoundments exempted from land disposal restrictions under § 268.4(a)	NA
§264.13(b)(7)(i)	Sampling of impoundment contents	NA
§264.13(b)(7)(ii)	Analysis of test data	NA
§264.13(b)(7)(iii)	Annual removal of residues which are not delisted under § 260.22 or which exhibit a characteristic of hazardous waste and either:	NA
§264.13(b)(7)(iii)(A)	Do not meet applicable treatment standards of Part 268, Subpart D; or	NA
§264.13(b)(7)(iii)(B)	Where no treatment standards have been established;	NA
§264.13(b)(7)(iii)(B)(1)	Such residues are prohibited from land disposal under § 268.32 or the Resource Conservation and Recovery Act § 3004(d); or	NA
§264.13(b)(7)(iii)(B)(2)	Such residues are prohibited from land disposal under § 268.33(f)	NA
§264.13(b)(8)	For owner/operator seeking an exemption to the air emission standards of Subpart CC in accordance with § 264.1082	B.5.4
§264.13(b)(8)(i)	If direct measurement is used for the waste determination, the procedures and schedules for waste sampling and analysis and the results of the analysis of test data to verify the exemption	B.5.4
§264.13(b)(8)(ii)	If knowledge of the waste is used for the waste determination, any information prepared by the facility owner/operator or by the generator of the hazardous waste if the waste is received from off-site, that is used as the basis for knowledge of the waste	B.5.4
§264.13(c)	For off-site facilities, the procedures which will be used to inspect and, if necessary, analyze each movement of hazardous waste received at the facility to ensure that it matches the identity of the waste designated on the accompanying manifest or shipping paper	B.4

Table C-1 (Continued)

Regulatory Citation(s)	Description of Requirement	Location in the Waste Analysis Plan
§264.13(c)(1)	The procedures to determine the identity of each movement of waste managed at the facility	B.4
§264.13(c)(2)	The sampling method which will be used to obtain a representative sample of the waste to be identified, if the identification method includes sampling	B.4
§264.13(c)(3)	The procedures for an off-site landfill receiving containerized hazardous wastes to determine whether a hazardous waste generator or treater has added a biodegradable sorbent to the waste in the container	NA

[a] NA = not applicable

Table C-2

Descriptions of Hazardous Waste Stored at LANL

Waste Description[a]	Waste-Generating Process[a]	Basis for Characterization[a]	Potential EPA[b] Hazardous Waste Numbers	Potential Hazardous Waste Constituents and/or Characteristics	Regulatory Limits[c] (milligrams per liter)	Potential Underlying Hazardous Constituents
Spent Solvents	Research and development (R&D) activities; laser research; organic and inorganic chemistry research (e.g., solvent extractions, liquid chromatography solvents, polymer synthesis, and distillations); cleaning; and degreasing operations	Acceptable Knowledge[d] Sampling and Analysis	D001 D002 D003 D004 D005 D006 D007 D008 D009 D010 D011 D018 D019 D021 D022 D026 D027 D028 D029 D030 D032 D034 D035 D036 D037 D038 D040 D041 D042 D043 F001 F002 F003 F004 F005 U213	Ignitability Corrosivity Reactivity Arsenic Barium Cadmium Chromium Lead Mercury Selenium Silver Benzene Carbon tetrachloride Chlorobenzene Chloroform Cresol 1,4-Dichlorobenzene 1,2-Dichloroethane 1,1-Dichloroethylene 2,4-Dinitrotoluene Hexachlorobenzene Hexachloroethane Methyl ethyl ketone Nitrobenzene Pent~~r~~achlorophenol Pyridine Trichloroethylene 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol Vinyl chloride Spent halogenated solvents Spent halogenated solvents Spent non-halogenated solvents Spent non-halogenated solvents Spent non-halogenated solvents Tetrahydrofuran	NA[e] NA[e] NA[e] 5.0 100.0 1.0 5.0 5.0 0.2 1.0 5.0 0.5 0.5 100.0 6.0 200.0[h] 7.5 0.5 0.7 0.13 0.13 3.0 200.0 2.0 100.0 5.0 0.5 400.0 2.0 0.2 NA[e] NA[e] NA[e] NA[e] NA[e] NA[e]	Antimony, Arsenic, Barium, Cadmium, Cyanides (Total), Chromium (Total), Lead, Mercury-all others, Selenium, Silver, Acetone, Acetonitrile, Benzene, Carbon tetrachloride, Chlorobenzene, Chloroform, Cresol, 1,4-Dichlorobenzene, 1,2-Dichloroethane, 1,1-Dichloroethylene, 2,4-Dinitrotoluene, 1,4-Dioxane, Ethyl ether, Hexachlorobenzene, Hexachloroethane, Methanol, Methylene chloride, Methyl ethyl ketone, Nitrobenzene, Pentachlorophenol, Pyridine, Toluene, Triethylamine, Trichloroethylene, 2,4,5-Trichlorophenol, 2,4,6-Trichlorophenol, Vinyl chloride and all applicable constituents identified above the UHC regulatory limit.

Table C-2 (continued)

Waste Description[a]	Waste-Generating Process[a]	Basis for Characterization[a]	Potential EPA[b] Hazardous Waste Numbers	Potential Hazardous Waste Constituents and/or Characteristics	Regulatory Limits[c] (milligrams per liter)	Potential Underlying Hazardous Constituents
Contaminated Solid Wastes	Machining operations, chemistry research, decontamination and decommissioning projects, metal finishing operations, HE wastewater filtration, and general maintenance operations	Acceptable Knowledge[d] Sampling and Analysis	D001	Ignitability	NA[e]	Arsenic, Barium, Beryllium, Cadmium, Chromium, Lead, Mercury-all others, Selenium, Silver, Thallium,Benzene, Carbon Disulfide, Carbon Tetrachloride, Chlorobenzene, Chloroform, o-Cresol, m-Cresol, p-Cresol Cresol,1,4-Dichlorobenzene 1,1-Dichloroethylene,2,4-Dinitrotoluene, Ethyl Ether, Heptachlor (and its epoxide), Hexachlorobenzene Hexachlorobutadiene, Hexachloroethane, Methanol, Methyl ethyl ketone, Methylene Chloride, Nitrobenzene, Pentachlorophenol, Phenol, p,p'-DDT, Pyridine, Tetrachloroethylene, Trichloroethylene, 2,4,5-Trichlorophenol, 2,4,6-Trichlorophenol, Vinyl chloride, and all applicable constituents identified above the UHC regulatory limit
			D003	Reactivity	NA[e]	
			D004	Arsenic	5.0	
			D005	Barium	100.0	
			D006	Cadmium	1.0	
			D007	Chromium	5.0	
			D008	Lead	5.0	
			D009	Mercury	0.2	
			D010	Selenium	1.0	
			D011	Silver	5.0	
			D018	Benzene	0.5	
			D019	Carbon tetrachloride	0.5	
			D021	Chlorobenzene	100.0	
			D022	Chloroform	6.0	
			D023	o-Cresol	200.0[h]	
			D024	m-Cresol	200.0[h]	
			D025	p-Cresol	200.0[h]	
			D026	Cresol	200.0[h]	
			D027	1,4-Dichlorobenzene	7.5	
			D028	1,2-Dichloroethane	0.5	
			D029	1,1-Dichloroethylene	0.7	
			D030	2,4-Dinitrotoluene	0.13	
			D031	Heptachlor (and its epoxide)	0.008	
			D032	Hexachlorobenzene	0.13	
			D033	Hexachlorobutadiene	0.5	
			D034	Hexachloroethane	3.0	
			D035	Methyl ethyl ketone	200.0	
			D036	Nitrobenzene	2.0	
			D037	Pentrachlorophenol	100.0	
			D038	Pyridine	5.0[f]	
			D039	Tetrachloroethylene	0.7	
			D040	Trichloroethylene	0.5	
			D041	2,4,5-Trichlorophenol	400.0	
			D042	2,4,6-Trichlorophenol	2.0	
			D043	Vinyl chloride	0.2	
			F001	Spent halogented solvents	NA[e]	
			F002	Spent halogenated solvents	NA[e]	
			F003	Spent non-halogenated solvents	NA[e]	
			F004	Spent non-halogenated solvents	NA[e]	
			F005	Spent non-halogenated solvents	NA[e]	
			K045	Spent carbon	NA[e]	

Table C-2 (continued)

Waste Description[a]	Waste-Generating Process[a]	Basis for Characterization[a]	Potential EPA[b] Hazardous Waste Numbers	Potential Hazardous Waste Constituents and/or Characteristics	Regulatory Limits[c] (milligrams per liter)	Potential Underlying Hazardous Constituents
Paint and Related Wastes	Painting and finishing operations, and general facility maintenance	Acceptable Knowledge[d] Sampling and Analysis	D001 D005 D006 D007 D008 D009 D011 D036 F003 F005	Ignitability Barium Cadmium Chromium Lead Mercury Silver Nitrobenzene Spent non-halogenated solvents Spent non-halogenated solvents	NA[e] 100.0 1.0 5.0 5.0 0.2 5.0 2.0 NA[e] NA[e]	Barium, Cadmium, Chromium (Total), Lead,Mercury –all others, Silver, Methyl ethyl ketone,Nitrobenzene and all applicable constituents above the UHC regulatory limit
Photographic and Photocopier Wastes	Photographic film processing and photocopier operations	Acceptable Knowledge[d] Sampling and Analysis	D001 D002 D006 D007 D008 D011	Ignitability Corrosivity Cadmium Chromium Lead Silver	NA[e] NA[e] 1.0 5.0 5.0 5.0	Cadmium, Chromium, Lead, Silver and all applicable constituents above the UHC regulatory limit
Corrosive Liquid Wastes	Analytical chemistry research, electro-etching, and electro-polishing	Acceptable Knowledge[d] Sampling and Analysis	D001 D002 D003 D004 D005 D006 D007 D008 D009 D010 D011 D018 D022 D038 F002 F003 F005 P023	Ignitability Corrosivity Reactivity Arsenic Barium Cadmium Chromium Lead Mercury Selenium Silver Benzene Chloroform Pyridine Spent halogenated solvents Spent non-halogenated solvents Spent non-halogenated solvents Chloroacetaldehyde	NA[e] NA[e] NA[e] 5.0 100.0 1.0 5.0 5.0 0.2 1.0 5.0 0.5 6.0 5.0 NA[e] NA[e] NA[e] NA[e]	Acetone, Arsenic, Barium, Benzene, Cadmium, Chromium (Total), Chloroform, Cyanides (Total), 2,4-Dinitrophenol, Fluoride, Isobutyl alcohol, Lead, Mercury-all others, Methanol, Nickel, o-Nitrophenol, Pyridine Selenium, Silver, Sulfide, Thallium, Triethylamine, Zinc, and all applicable constituents above the UHC regulatory limit

Solid Metals and Metallic Compounds	Machining and cutting operations; synthesis reactions; solder from electronic manufacturing, repair, and brazing operations; and grinding operations	Acceptable Knowledge[d] Sampling and Analysis	D001 D003 D004 D005 D006 D007 D008 D009 D010 D011	Ignitability Reactivity Arsenic Barium Cadmium Chromium Lead Mercury Selenium Silver	NA[e] NA[e] 5.0 100.0 1.0 5.0 5.0 0.2 1.0 5.0	Arsenic, Barium, Cadmium, Chromium, Lead, Mercury-all others, Nickel, Silver, and all applicable constituents above the UHC regulatory limit
Waste Description[a]	**Waste-Generating Process[a]**	**Basis for Characterization[a]**	**Potential EPA[b] Hazardous Waste Numbers**	**Potential Hazardous Waste Constituents and/or Characteristics**	**Regulatory Limits[c] (milligrams per liter)**	**Potential Underlying Hazardous Constituents**
Contaminated Non-corrosive Aqueous and Non-aqueous Solutions and Sludges	Vacuum pump maintenance, analytical spectrometry, equipment cleaning and maintenance, vehicle maintenance, synthesis reactions, metal-polishing operations, and chemical research	Acceptable Knowledge[d] Sampling and Analysis	D001 D002 D003 D004 D005 D006 D007 D008 D009 D010 D011 D018 D019 D021 D022 D023 D024 D025 D026 D027 D028 D029 D030 D032 D033 D034 D035 D036 D037 D038 D039 D040	Ignitability Corrosivity Reactivity Arsenic Barium Cadmium Chromium Lead Mercury Selenium Silver Benzene Carbon tetrachloride Chlorobenzene Chloroform o-Cresol m-Cresol p-Cresol Cresol 1,4-Dichlorobenzene 1,2-Dichloroethane 1,1-Dichloroethylene 2,4-Dinitrotoluene Hexachlorobenzene Hexachlorobutadiene Hexachloroethane Methyl ethyl ketone Nitrobenzene Pentrachlorophenol Pyridine Tetrachloroethylene Trichloroethylene	NA[e] NA[e] NA[e] 5.0 100.0 1.0 5.0 5.0 0.2 1.0 5.0 0.5 0.5 100.0 6.0 200.0[h] 200.0[h] 200.0[h] 200.0[h] 7.5 0.5 0.7 0.13[f] 0.13[f] 0.5 3.0 200.0 2.0 100.0 5.0 0.7 0.5	Acetone, Acetonitrile, Antimony, Arsenic, Barium, Benzene, Cadmium, Carbon tetrachloride, Chlorobenzene, Chloroform Chromium (Total), Chrysene, o-Cresol, m-Cresol p-Cresol, Cresol m-Dichlorobenzene, 1,4-Dichlorobenzene 1,2-Dichloroethane, 1,1-Dichloroethylene, 2,4-Dinitrotoluene, 4,6-Dinitro-o-cresol, 1,4-Dioxane, Fluorene, Indeno(1,2,3-c,d) pyrene, Hexachlorobenzene, Hexachlorobutadiene, Hexachloroethane, Lead, Mercury-all others, Methanol, Methyl ethyl ketone, Methylene chloride, Naphthalene, Nitrobenzene, p-Nitrophenol, Pentachlorophenol, Pyridine, Selenium, Silver, Tetrachloroethylene, Toluene, Trichloroethylene, 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol, Zinc Vinyl chloride and all applicable constituents

			D041 D042 D043 F001 F002 F003 F004 F005	2,4,5-Trichlorophenol 2,4,6-Trichlorophenol Vinyl chloride Spent halogenated solvents Spent halogenated solvents Spent non-halogenated solvents Spent non-halogenated solvents Spent non-halogenated solvents	400.0 2.0 0.2 NA[e] NA[e] NA[e] NA[e] NA[e]	above the UHC regulatory limit
Waste Description[a]	**Waste-Generating Process[a]**	**Basis for Characterization[a]**	**Potential EPA[b] Hazardous Waste Numbers**	**Potential Hazardous Waste Constituents and/or Characteristics**	**Regulatory Limits[c] (milligrams per liter)**	**Potential Underlying Hazardous Constituents**
Mercury Wastes	Lamp replacement, chemical research, mercury spill cleanup, and equipment cleaning and maintenance	Acceptable Knowledge[d] Sampling and Analysis	D003 D008 D009 D011 U151	Reactivity Lead Mercury Silver Mercury	NA[e] 5.0 0.2 5.0 NA[e]	Barium, Chromium (Total), Lead, Mercury-all others, Silver Thallium, Zinc and all applicable constituents above the UHC regulatory limit
Used Batteries and Battery Fluids	Equipment maintenance	Acceptable Knowledge[d]	D002 D003 D006 D007 D008 D009 D011 D038	Corrosivity Reactivity Cadmium Chromium Lead Mercury Silver Pyridine	NA[e] NA[e] 1.0 5.0 5.0 0.2 5.0 5.0[f]	Cadmium, Chromium, Lead, Mercury-all others, Pyridine, Silver and all applicable constituents above the UHC regulatory limit

Unused/Off-specification Commercial Chemical Products	R&D, spill residues, and general facility operations	Acceptable Knowledge[d] Sampling and Analysis	D001 D002 D003 D004 through D043 All P- and U-listed EPA Hazardous Waste Numbers[g]	Ignitability Corrosivity Reactivity Toxicity characteristic wastes Discarded commercial chemical products and off-specification species	NA[e] NA[e] NA[e] -[c] NA[e]	Arsenic, Barium, Cadmium, Chromium (Total), Lead, Mercury-all others, Nickel, Selenium, Silver, Acetonitrile, Benzene, Carbon tetrachloride Chlorobenzene, Chloroform, o-Cresol, m-Cresol, p- Cresol,Cresol, 2, 4-D, 1,4-Dichlorobenzene, 1-Dichlrorobenzene, 1,1-Dichloroethylene, 2,4-Dinitrotoluene, Endrin, Heptachlor (and its epoxide), Hexachlorobenzene Hexachlorobutadiene, Hexachloroethane, Lindane, Methoxychlor, Methyl ethyl ketone,,Nitrobenzene, Pentachlorophenol Pyridine, Tetrachloroethylene, Toluene, Toxaphene, Trichloroethylene, 2,4,5-Trichlorophenol, 2,4,6-Trichlorophenol, 2,4,5-TP (Silvex), Vinyl chloride, and all applicable constituents identified above the UHC regulatory limit

Waste Description[a]	**Waste-Generating Process[a]**	**Basis for Characterization[a]**	**Potential EPA[b] Hazardous Waste Numbers**	**Potential Hazardous Waste Constituents and/or Characteristics**	**Regulatory Limits[c] (milligrams per liter)**	**Potential Underlying Hazardous Constituents**
Gas Cylinder Waste	R&D and general facility operations	Acceptable Knowledge[d]	D001 D002 D003 Potential D-coded EPA Hazardous Waste Numbers	Ignitability Corrosivity Reactivity Toxicity characteristic wastes Discarded commercial chemical products	NA[e] NA[e] NA[e] -[c] NA[e]	Arsenic, Barium, Cadmium, Chromium (Total), Lead, Mercury-all others, Selenium, Silver, Benzene, Carbon tetrachloride Chlorobenzene, Chloroform o-Cresol, m-Cresol, p-

			Potential P-and U-listed EPA Hazardous Waste Numbers[g]	and off-specification species		Cresol, Cresol, 2,4-D, 1,4-Dichlorobenzene 1,1-Dichloroethylene,2,4-Dinitrotoluene, Endrin, Heptachlor (and its epoxide), Hexachlorobenzene Hexachlorobutadiene, Hexachloroethane, Lindane, Methoxychlor, Methyl ethyl ketone, Nitrobenzene, Pentachlorophenol Pyridine, Tetrachloroethylene, Toxaphene, Trichloroethylene, 2,4,5-Trichlorophenol, 2,4,6-Trichlorophenol, 2,4,5-TP (Silvex) Vinyl chloride, and all applicable constituents identified above the UHC regulatory limit
Environmental Restoration (ER) Soils and Sludges	Site decommissioning, site characterization, and site remediation; includes septic tank and detention basin closure, removal actions, and other remedial actions and site closures	Acceptable Knowledge[d] Sampling and Analysis	D001 D003 D004 D005 D006 D007 D008 D009 D010 D011 D018 D022 D030 D032 D033 D034 D036 D039 D040 D042 F001 F002 F003	Ignitability Reactivity Arsenic Barium Cadmium Chromium Lead Mercury Selenium Silver Benzene Chloroform 2,4-Dinitrotoluene Hexachlorobenzene Hexachlorobutadiene Hexachloroethane Nitrobenzene Tetrachloroethylene Trichloroethylene 2,4,6-Trichlorophenol Spent halogenated solvents Spent halogenated solvents Spent non-halogenated solvents	NA[e] NA[e] 5.0 100.0 1.0 5.0 5.0 0.2 1.0 5.0 0.5 6.0 0.13[f] 0.13[f] 0.5 3.0 2.0 0.7 0.5 2.0 NA[e] NA[e] NA[e]	Arsenic, Barium, Cadmium, Chromium, Lead, Mercury-all others, Selenium, Silver, Benzene, Chloroform, 2,4-Dinitrotoluene, Hexachlorobenzene, Hexachlorobutadiene, Hexachloroethane, Nitrobenzene, Tetrachloroethylene, Trichloroethylene, 2,4,6-Trichlorophenol, and all applicable constituents identified above the UHC regulatory limit

			F005	Spent non-halogenated solvents	NA[e]	

Waste Description[a]	Waste-Generating Process[a]	Basis for Characterization[a]	Potential EPA[b] Hazardous Waste Numbers	Potential Hazardous Waste Constituents and/or Characteristics	Regulatory Limits[c] (milligrams per liter)	Potential Underlying Hazardous Constituents
ER Aqueous Liquids	Decontamination of remedial equipment, drilling fluids and well development fluids, septic tank liquids, and contaminated storm water runoff	Acceptable Knowledge[d] Sampling and Analysis	D001 D002 D004 D005 D006 D007 D008 D009 D010 D011 D038 F002 F003 F005	Ignitability Corrosivity Arsenic Barium Cadmium Chromium Lead Mercury Selenium Silver Pyridine Spent halogenated solvents Spent non-halogenated solvents Spent non-halogenated solvents	NA[e] NA[e] 5.0 100.0 1.0 5.0 5.0 0.2 1.0 5.0 5.0 NA[e] NA[e] NA[e]	Arsenic, Barium Cadmium, Chromium, Lead, Mercury-all others, Selenium, Silver, Pyridine and all applicable constituents identified above the UHC regulatory limit
ER Debris	Site decommissioning, site characterization, and site remediation; includes septic tank and detention basin closure, removal actions, and other remedial actions and site closures	Acceptable Knowledge[d]	D001 D003 D004 D005 D006 D007 D008 D009 D010 D011 D018 D022 D030 D032 D033 D034 D036 D039 D040 D042	Ignitability Reactivity Arsenic Barium Cadmium Chromium Lead Mercury Selenium Silver Benzene Chloroform 2,4-Dinitrotoluene Hexachlorobenzene Hexachlorobutadiene Hexachloroethane Nitrobenzene Tetrachloroethylene Trichloroethylene 2,4,6-Trichlorophenol	NA[e] NA[e] 5.0 100.0 1.0 5.0 5.0 0.2 1.0 5.0 0.5 6.0 0.13[f] 0.13[f] 0.5 3.0 2.0 0.7 0.5 2.0	Arsenic, Barium, Cadmium, Chromium, Lead, Mercury-all others, Selenium, Silver, Benzene, Chloroform 2,4-Dinitrotoluene, Hexachlorobenzene, Hexachlorobutadiene, Hexachloroethane, Nitrobenzene, Tetrachloroethylene, Trichloroethylene, 2,4,6-Trichlorophenol, and all applicable constituents identified above the UHC regulatory limit
ER Debris (continued)			F001 F002 F003 F005	Spent halogenated solvents Spent halogenated solvents Spent non-halogenated solvents Spent non-halogenated solvents	NA[e] NA[e] NA[e] NA[e]	

a Denotes information from the Los Alamos National Laboratory waste characterization documentation database.

b U.S. Environmental Protection Agency.

c A solid waste exhibits the characteristics of toxicity if, using the Toxicity Characteristic Leaching Procedure, Test Method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (EPA, 1986), the extract from a representative sample of the waste contains any of the contaminants listed (D004-D043) at a concentration equal to or greater than the respective value given in the New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20.4.1 NMAC), Subpart II, Part 261, Subpart C [6-14-00].

d Acceptable knowledge is broadly defined as process knowledge, additional characterization data, and/or facility records of analysis, U.S. Environmental Protection Agency, 1994. "Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Waste, A Guidance Manual," *OSWER 9938.4-03*, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C.

e Not applicable: Refers to the absence of regulatory limits for ignitable, corrosive, and reactive characteristic wastes and F-, P-, and U-listed wastes.

f The quantitation limit is greater than the calculated regulatory level. The quantitation limit therefore becomes the regulatory level (20.4.1 NMAC, Subpart II, 261.24, Table 1) [6-14-00].

g Refers to the P- and U-listed wastes found in the "Los Alamos National Laboratory General Part A Permit Application," Revision 3.0, 2002, Los Alamos National Laboratory, Los Alamos, New Mexico.

h If o-, m-, and p-Cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used. The regulatory level of total cresol is 200 milligrams per liter.

Note: Fluoride, sulfide, vanadium, and zinc are not "underlying hazardous constituents" in characteristic wastes, according to the definition in § 268.2(i). Selenium is not an underlying hazardous constituent as defined at § 268.2(i) because its Universal Treatment Standard level is greater than its Toxicity Characteristic level, thus a treated selenium waste would always be characteristically hazardous, unless it is treated to below its characteristic level.

Table C-3

Descriptions of Mixed Low-Level Waste Stored at LANL

Waste Description[a]	Waste Generating Activity[a]	Basis for Hazardous Waste Designation[a]	Potential EPA[b] Hazardous Waste Numbers	Potential Hazardous Waste Constituents and/or Characteristics	Regulatory Limits[c] (milligrams per liter)	Potential Underlying Hazardous Constituents
Solid Wastes						
Soils with Heavy Metals	Decontamination and decommissioning (D&D) and Environmental Restoration (ER) activities	Acceptable Knowledge[d] and Preliminary Analysis[e]	D004 D005 D006 D007 D008 D009 D010 D011	Arsenic Barium Cadmium Chromium Lead Mercury Selenium Silver	5.0 100.0 1.0 5.0 5.0 0.2 1.0 5.0	Arsenic, Barium, Cadmium, Chromium (Total), Mercury-all others, Lead, Selenium, Silver, Vanadium, Zinc and those constituents identified above the UHC regulatory limit
Environmental Restoration Soils	Remediation of release sites and D&D activities	Acceptable Knowledge[d] Sampling and Analysis	D005 D006 D007 D008 D009 D028 D029 F001 F002 F004 F005	Barium Cadmium Chromium Lead Mercury 1,2-Dichloroethane 1,1-Dichloroethylene Spent halogenated solvents Spent halogenated solvents Spent non-halogenated solvents Spent non-halogenated solvents	100.0 1.0 5.0 5.0 0.2 0.5 0.7 NA[e] NA[e] NA[e] NA[e]	Barium, Cadmium, Chromium (Total), Lead, Mercury 1,2-Dichloroethane 1,1-Dichloroethylene and all applicable constituents identified above the UHC regulatory limit.
Inorganic Solid Oxidizers	D&D of research laboratories and research and development (R&D)	Acceptable Knowledge[d]	D001 D003 D005	Ignitability Reactivity Barium	NA[e] NA[e] 100.0	Barium and all applicable constituents identified above the UHC limit
Lead Waste	Radioisotope experiments and other reactor, accelerator, laser, and x-ray activities	Acceptable Knowledge[d]	D002 D003 D007 D008 D009	Corrosivity Reactivity Chromium Lead Mercury	NA[e] NA[e] 5.0 5.0 0.2	Chromium, Lead, Mercury-all others and all applicable constituents identified above the UHC regulatory limit
Noncombustible Debris	Maintenance, D&D, R&D, and ER activities	Acceptable Knowledge[d]	D001 D003 D004 D005 D006	Ignitability Reactivity Arsenic Barium Cadmium	NA[e] NA[e] 5.0 100.0 1.0	Arsenic, Barium, Cadmium, Chromium (Total), Lead, Mercury-all others, Selenium, Silver, and

			D007 D008 D009 D010 D011 F002 F005	Chromium Lead Mercury Selenium Silver Spent halogenated solvents Spent non-halogenated solvents	5.0 5.0 0.2 1.0 5.0 NA[e] NA[e]	all applicable constituents identified above the UHC regulatory limit

Table C-3 (continued)

Waste Description[a]	Waste Generating Activity[a]	Basis for Hazardous Waste Designation[a]	Potential EPA[b] Hazardous Waste Numbers	Potential Hazardous Waste Constituents and/or Characteristics	Regulatory Limits[c] (milligrams per liter)	Potential Underlying Hazardous Constituents
Solid Wastes (Continued)						
Combustible Debris	Maintenance, R&D, D&D, and ER activities	Acceptable Knowledge[d]	D001 D003 D004 D005 D006 D007 D008 D009 D010 D011 F001 F002 F003 F005	Ignitability Reactivity Arsenic Barium Cadmium Chromium Lead Mercury Selenium Silver Spent halogenated solvents Spent halogenated solvents Spent non-halogenated solvents Spent non-halogenated solvents	NA[e] NA[e] 5.0 100.0 1.0 5.0 5.0 0.2 1.0 5.0 NA[e] NA[e] NA[e] NA[e]	Arsenic, Barium, Chromium, Lead, Mercury-all others, Selenium, Silver, Nickel, Zinc and all applicable constituents identified above the UHC regulatory limit
Organic-Contaminated Noncombustible Solids	Vacuum pump maintenance, R&D, D&D, and ER activities	Acceptable Knowledge[d]	D001 D004 D005 D006 D007 D008 D009 D010 D011 D018 D027 D030 D032 D033 D034 D035 D037 D038 D041 D042 F001 F002 F004 F005	Ignitability Arsenic Barium Cadmium Chromium Lead Mercury Selenium Silver Benzene 1,4-Dichlorobenzene 2,4-Dinitrotoluene Hexachlorobenzene Hexachlorobutadiene Hexachloroethane Methyl ethyl ketone Pentrachlorophenol Pyridine 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol Spent halogenated solvents Spent halogenated solvents Spent non-halogenated solvents Spent non-halogenated solvents	NA[e] 5.0 100.0 1.0 5.0 5.0 0.2 1.0 5.0 0.5 7.5 0.13[f] 0.13[f] 0.5 3.0 200.0 100.0 5.0[f] 400.0 2.0 NA[e] NA[e] NA[e] NA[e]	Arsenic, Barium Cadmium, Chromium Lead, Mercury Selenium, Silver Benzene, 1,4-Dichlorobenzene 2,4-Dinitrotoluene Hexachlorobenzene Hexachlorobutadiene Hexachloroethane, Methoxychlor, Methyl ethyl ketone, Pentachlorophenol, Pyridine, 2,4,5-Trichlorophenol, 2,4,6-Trichlorophenol and all applicable constituents identified above the UHC regulatory limit

Table C-3 (continued)

Waste Description[a]	Waste Generating Activity[a]	Basis for Hazardous Waste Designation[a]	Potential EPA[b] Hazardous Waste Numbers	Potential Hazardous Waste Constituents and/or Characteristics	Regulatory Limits[c] (milligrams per liter)	Potential Underlying Hazardous Constituents
Solid Wastes (Continued)						
Organic-Contaminated Combustible Solids	Maintenance, D&D, and ER activities	Acceptable Knowledge[d]	D001 D003 D007 D008 D009 D030 D035 F001 F002 F003 F005	Ignitability Reactivity Chromium Lead Mercury 2,4-Dinitrotoluene Methyl ethyl ketone Spent halogenated solvents Spent halogenated solvents Spent non-halogenated solvents Spent non-halogenated solvents	NA[e] NA[e] 5.0 5.0 0.2 0.13[f] 200.0 NA[e] NA[e] NA[e] NA[e]	Chromium, Lead Mercury-all other, 2,4-Dinitrotoluene, Methyl ethyl ketone and all applicable constituents identified above the UHC regulatory limit
Water-Reactive Wastes	Cleanup of HE firing-site debris, machining and disassembly of test components	Acceptable Knowledge[d]	D001 D003 D005 F002	Ignitability Reactivity Barium Spent halogenated solvents	NA[e] NA[e] 100.0 NA[e]	Barium, and all applicable constituents identified above the UHC regulatory limit
Mercury Wastes	Cleanup operations	Acceptable Knowledge[d]	D005 D007 D008 D009 F001	Barium Chromium Lead Mercury Spent halogenated solvents	100.0 5.0 5.0 0.2 NA[e]	Barium, Chromium, Lead, Mercury-all others and all applicable constituents identified above the UHC regulatory limit
Unused Solid Reagent Chemical Wastes	R&D activities	Acceptable Knowledge[d]	D001 D002 D003 All P- and U-listed EPA Hazardous Waste Numbers[h]	Ignitability Corrosivity Reactivity Discarded commercial chemical products and off-specification species	NA[e] NA[e] NA[e] NA[e]	All applicable constituents above the UHC regulatory limit

Table C-3 (continued)

Waste Description[a]	Waste Generating Activity[a]	Basis for Hazardous Waste Designation[a]	Potential EPA[b] Hazardous Waste Numbers	Potential Hazardous Waste Constituents and/or Characteristics	Regulatory Limits[c] (milligrams per liter)	Potential Underlying Hazardous Constituents
Liquid Wastes						
Spent Solvents and Contaminated Solvent Mixtures	Maintenance, cleaning, and degreasing activities: R&D; processing operations, such as extraction, bench-scale experimental inorganic chemistry, environmental analysis, radiochemistry	Acceptable Knowledge[d]	D001 D002 D004 D005 D007 D008 D009 D010 D011 D018 D019 D021 D022 D027 D028 D030 D032 D033 D034 D036 D042 D043 F001 F002 F003 F005	Ignitability Corrosivity Arsenic Barium Chromium Lead Mercury Selenium Silver Benzene Carbon tetrachloride Chlorobenzene Chloroform 1,4-Dichlorobenzene 1,2-Dichloroethane 2,4-Dinitrotoluene Hexachlorobenzene Hexachlorobutadiene Hexachloroethane Nitrobenzene 2,4,6-Trichlorophenol Vinyl chloride Spent halogenated solvents Spent halogenated solvents Spent non-halogenated solvents Spent non-halogenated solvents	NA[e] NA[e] 5.0 100.0 5.0 5.0 0.2 1.0 5.0 0.5 0.5 100.0 6.0 7.5 0.5 0.13[f] 0.13[f] 0.5 3.0 2.0 2.0 0.2 NA[e] NA[e] NA[e] NA[e]	Arsenic, Barium, Chromium, Lead, Mercury-all others, Selenium, Silver, Benzene, Carbon tetrachloride, Chlorobenzene, Chloroform, 1,4-Dichlorobenzene, 1,2-Dichloroethane, 2,4-Dinitrotoluene, Hexachlorobenzene, Hexachlorobutadiene, Hexachloroethane, Nitrobenzene, Tribromomethane (Bromoform) 2,4,6-Trichlorophenol, Vinyl chloride and all applicable constituents identified above the UHC regulatory limit
Liquid Wastes (Continued)						
Corrosive Liquid Wastes	Radiochemistry research, plutonium-processing operations, and analytical chemistry	Acceptable Knowledge[d]	D001 D002 D004 D006 D007 D008 D009 D010 D011 D036 D043 F001 F002 F005	Ignitability Corrosivity Arsenic Cadmium Chromium Lead Mercury Selenium Silver Nitrobenzene Vinyl chloride Spent halogenated solvents Spent halogenated solvents Spent non-halogenated solvents	NA[e] NA[e] 5.0 1.0 5.0 5.0 0.2 1.0 5.0 2.0 0.2 NA[e] NA[e] NA[e]	Arsenic, Barium, Cadmium, Bromodichloromethane, Chromium (Total), Lead, Mercury-all others, Nitrobenzene, Nickel, Selenium, Silver, Vinyl Chloride and all applicable constituents identified above the UHC regulatory limit

Aqueous and Nonaqueous Liquids Contaminated with Heavy Metals and/or Organics	ER activities, metal-polishing operations, and radiochemistry research	Acceptable Knowledge[d] Sampling and Analysis[i]	D001 D003 D004 D005 D006 D007 D008 D009 D010 D011 D018 D019 D021 D022 D023 D024 F002 F005	Ignitability Reactivity Arsenic Barium Cadmium Chromium Lead Mercury Selenium Silver Benzene Carbon tetrachloride Chlorobenzene Chloroform o-Cresol m-Cresol Spent halogenated solvents Spent non-halogenated solvents	NA[e] NA[e] 5.0 100.0 1.0 5.0 5.0 0.2 1.0 5.0 0.5 0.5 100.0 6.0 200.0[g] 200.0[g] NA[e] NA[e]	Arsenic, Barium, Cadmium, Chromium (Total), Lead, Mercury-all others, Selenium, Silver, Benzene, Carbon Tetrachloride, Chlorobenzene, Chloroform, o-cresol, m-cresol, 1,2-Dichloroethane, and all applicable constituents identified above the UHC regulatory limit
Liquid Wastes (Continued)						

Oil Wastes	Equipment maintenance operations	Acceptable Knowledge[d]	D004 D005 D006 D007 D008 D009 D010 D018 D019 D027 D028 D030 D032 D033 D034 D036 D037 D038 D041 D042 D043 F001 F002 F003 F005	Arsenic Barium Cadmium Chromium Lead Mercury Selenium Benzene Carbon tetrachloride 1,4-Dichlorobenzene 1,2-Dichloroethane 2,4-Dinitrotoluene Hexachlorobenzene Hexachlorobutadiene Hexachloroethane Nitrobenzene Pent~~r~~achlorophenol Pyridine 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol Vinyl chloride Spent halogenated solvents Spent halogenated solvents Spent non-halogenated solvents Spent non-halogenated solvents	5.0 100.0 1.0 5.0 5.0 0.2 1.0 0.5 0.5 7.5 0.5 0.13[f] 0.13[f] 0.5 3.0 2.0 100.0 5.0[f] 400.0 2.0 0.2 NA[e] NA[e] NA[e] NA[e]	Arsenic, Barium, Cadmium, Chromium Lead, Mercury-all others, Selenium, Silver, Thallium, Benzene, Carbon tetrachloride, 1,4-Dichlorobenzene, 1,2-Dichloroethane, 2,4-Dinitrotoluene, Diethylphthalate, Di-n-butyl phthalate, Hexachlorobutadiene, Hexachlorobenzene, Hexachloroethane, Hexachlorocyclopentadiene, Nitrobenzene, Pentachlorophenol, Pyridine, 2,4,5-Trichlorophenol, 2,4,6-Trichlorophenol, Vinyl chloride and all applicable constituents identified above the UHC regulatory limit
Unused Liquid Reagent Chemical Wastes	R&D activities	Acceptable Knowledge[d]	D001 D002 D035 All P- and U-listed EPA Hazardous Waste Numbers[h]	Ignitability Corrosivity Methyl ethyl ketone Discarded commercial chemical products and off-specification species	NA[e] NA[e] 200.0 NA[e]	Methyl ethyl ketone and all applicable constituents identified above the UHC regulatory limit
Gas Cylinder Waste						
Gas Cylinder Waste	R&D and general facility operations	Acceptable Knowledge[d]	D001 D002 D003 Potential D-coded EPA Hazardous Waste Numbers Potential P- and U-listed EPA Hazardous Waste Numbers[i]	Ignitability Corrosivity Reactivity Toxicity characteristic wastes Discarded commercial chemical products and off-specification species	NA[e] NA[e] NA[e] -[c] NA[e]	All applicable constituents above the UHC regulatory limit

[a] Denotes information from the Los Alamos National Laboratory waste characterization documentation database.

[b] U.S. Environmental Protection Agency.

[c] A solid waste exhibits the characteristic of toxicity if, using the Toxicity Characteristic Leaching Procedure, Test Method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (EPA, 1986), the extract from a representative sample of the waste contains any of the contaminants listed (D004-D043) at a concentration equal to or greater than the respective value given in the New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20.4.1 NMAC), Subpart II, Part 261, Subpart C [6-14-00].

[d] Acceptable knowledge is broadly defined as process knowledge, additional characterization data, and/or facility records of analysis, U.S. Environmental Protection Agency, 1994, "Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Waste, A Guidance Manual," *OSWER 9938.4-03*, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C.

[e] Not applicable: Refers to the absence of regulatory limits for ignitable, corrosive, and reactive characteristic wastes and F-, P-, and U-listed wastes.

[f] The quantitation limit is greater than the calculated regulatory level. The quantitation limit therefore becomes the regulatory level (20.4.1 NMAC, Subpart II, 261.24, Table 1 [6-14-00]).

[g] If o-, m-, and p-Cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used. The regulatory level of total cresol is 200 milligrams per liter.

[h] Refers to the P- and U-listed wastes found in the "Los Alamos National Laboratory General Part A Permit Application," Revision 3.0, 2002, Los Alamos National Laboratory, Los Alamos, New Mexico.

Note: Fluoride, sulfide, vanadium, and zinc are not "underlying hazardous constituents" in characteristic wastes, according to the definition in § 268.2(i). Selenium is not an underlying hazardous constituent as defined at § 268.2(i) because its Universal Treatment Standard level is greater than its Toxicity Characteristic level, thus a treated selenium waste would always be characteristically hazardous, unless it is treated to below its characteristic level.

Table C-4

LANL MTRUW Stream Waste Matrix Codes Correlated with LANL Waste Identification Systems

Summary Category Group	Waste Matrix Code	Waste Stream Description	RSWD Code[a]		IDC[b]		TRUCON Code[c]	
S3000 - Homogeneous	S3100	Homogeneous Inorganic, Cemented	A-25	Leached Process Residues	002	Cemented Aqueous Waste	LA111	Solidified Aqueous or Homogeneous Inorganic Solids
			A-26	Evaporator Bottoms/Salts	006	Solidified Inorganic and Organic Process Solids	LA114	Solidified Inorganic Process Solids
			A-76	Cement Paste				
	S3100	Homogeneous Inorganic, Cemented Organics					LA126	Solidified Organic Process Solids
	S3100	Homogeneous Inorganic, Non-cemented	A-75	Chemical Treatment Sludge	003	Stabilized Aqueous Waste (dewatered sludge)	LA122	Solid Inorganic Waste
							LA130	Ash
	S3100	Homogeneous Inorganic, Salts	A-27	Nitrate Salts		Salt Waste	LA124	Pyrochemical Salt Waste
			A-28	Chloride Salts				
			A-29	Hydroxide Cake				
	S3100	Homogeneous Inorganic, Vermiculite	A-20	Hydrocarbon Oil – Liquid (Absorbed)			LA112	Solidified Organic Waste
			A-21	Silicon-Based - Liquid (Absorbed)				
S4000 – Soil/Gravel	S4100	Soil	A-90	Radioactively-Contaminated Soil				

Table B-4 (continued)

Summary Category Group	Waste Matrix Code	Waste Stream Description	RSWD Code[a]		IDC[b]		TRUCON Code[c]	
S5000 - Debris	S5300	Combustible Debris	A-14	Combustible Decon Waste	004	Combustible Waste	LA116	Combustible Debris
			A-15	Cellulosics				
			A-16	Plastics				
			A-17	Rubber Materials				
			A-18	Combustible Lab Trash				
			A-35	Combustible Building Debris				
			A-40	Combustible Hot-Cell Waste				
			A-60	Other Combustibles				
	S5400	Heterogeneous Debris	A-10	Graphite Solids	001	Metal Scrap and Incidental Combustibles	LA115	Graphite Waste
			A-19	Combined Combustible/Non-Combustible Lab Trash	005	Combined Noncombustible / Combustible Waste	LA117	Metal Waste
			A-30	PN Equipment	005LG	Glass Waste	LA118	Glass Waste
			A-31	Non-PN Equipment	005LM	Metal Waste	LA119	HEPA Filter Waste
			A-36	Noncombustible Building Debris	005P1	Leaded Rubber and Metal Waste	LA123	Leaded Rubber and Metal Waste

Table C-4 (continued)

Summary Category Group	Waste Matrix Code	Waste Stream Description	RSWD Code[a]	IDC[b]	TRUCON Code[c]
			A-41 Noncombustible Hot-Cell Waste A-46 Skull and Oxide A-47 Slag and Porcelain A-50 Metal Crucibles, Scrap, Dies A-51 Precious Metals A-52 Scrap Metal A-55 Filter Media A-56 Filter Media Residue A-61 Other Noncombustibles A-72 Beryllium Contaminated Debris A-74 Ion Exchange Resin A-80 Irradiation Sources A-85 Firing Point Residues A-95 Glass	005P2G Graphite Waste	LA125 Mixed Combustible / Noncombustible Waste

[a] RSWD = Radioactive Solid Waste Disposal [codes]

[b] IDC = Item Description Code

[c] TRUCON = TRUPACT-II Content [codes]

Table C-5

Descriptions of Mixed Transuranic Waste Stored at LANL[a]

Summary Category Group	Waste Matrix Code	Waste Stream Description	Waste-Generating Activity	Basis for Hazardous Waste Designation	Potential EPA[b] Hazardous Waste Numbers	Potential Hazardous Waste Constituents and/or Characteristics	Regulatory Limits[c] (milligrams per liter)	Potential Underlying Hazardous Constituents[f]
S3000 - Homogeneous	S3100	Homogeneous Inorganic, Cemented	Plutonium processing operations	Acceptable Knowledge[d]	D002	Corrosive	NA[e]	
					D003	Reactive	NA[e]	
					D004	Arsenic	5.0	
					D005	Barium hydroxide	100.0	
		Homogeneous Inorganic, Cemented Organics	Plutonium processing operations	Acceptable Knowledge[d]	D006	Cadmium	1.0	
					D007	Chromium	5.0	
					D008	Lead	5.0	
					D009	Mercury	0.2	
		Homogeneous Inorganic, Non-cemented	Plutonium processing operations	Acceptable Knowledge[d]	D010	Selenium	1.0	
					D011	Silver	5.0	
					D018	Benzene	0.5	
					D019	Carbon tetrachloride	0.5	
		Homogeneous Inorganic, Salts	Plutonium processing operations	Acceptable Knowledge[d]	D021	Chlorobenzene	100.0	
					D022	Chloroform	6.0	
					D035	Methyl ethyl ketone	200.0	
					D038	Pyridine	5.0[g]	
					D039	Tetrachloroethylene	0.7	
					D040	Trichloroethylene	0.5	
					F001	Spent halogenated solvents	NA[e]	
					F002	Spent halogenated solvents	NA[e]	
					F003	Spent non-halogenated solvents	NA[e]	
					F005	Spent non-halogenated solvents	NA[e]	

Table C-5 (continued)

Summary Category Group	Waste Matrix Code	Waste Stream Description	Waste-Generating Activity	Basis for Hazardous Waste Designation	Potential EPA[b] Hazardous Waste Numbers	Potential Hazardous Waste Constituents and/or Characteristics	Regulatory Limits[c] (milligrams per liter)	Potential Underlying Hazardous Constituents[f]
S3000 - Homogeneous	S3100	Homogeneous Inorganic, Vermiculite	Plutonium processing operations	Acceptable Knowledge[d]	D002	Corrosive	NA[e]	
					D004	Arsenic	5.0	
					D005	Barium hydroxide	100.0	
					D006	Cadmium	1.0	
					D007	Chromium	5.0	
					D008	Lead	5.0	
					D009	Mercury	0.2	
					D010	Selenium	1.0	
					D011	Silver	5.0	
					D018	Benzene	0.5	
					D019	Carbon tetrachloride	0.5	
					D021	Chlorobenzene	100.0	
					D022	Chloroform	6.0	
					D027	1,4-Dichlorobenzene	7.5	
					D028	1,2-Dichloroethane	0.5	
					D030	2,4-Dinitrotoluene	0.13[g]	
					D032	Hexachlorobenzene	0.13[g]	
					D033	Hexachlorobutadiene	0.5	
					D034	Hexachloroethane	3.0	
					D035	Methyl ethyl ketone	200.0	
					D036	Nitrobenzene	2.0	
					D037	Pentachlorophenol	100.0	
					D038	Pyridine	5.0[g]	
					D039	Tetrachloroethylene	0.7	
					D040	Trichloroethylene	0.5	
					D042	2,4,6-Trichlorophenol	2.0	
					D043	Vinyl Chloride	0.2	
					F001	Spent halogenated solvents	NA[e]	
					F002	Spent halogenated solvents	NA[e]	
					F003	Spent non-halogenated solvents	NA[e]	
					F005	Spent non-halogenated solvents	NA[e]	

Table C-5 (continued)

Summary Category Group	Waste Matrix Code	Waste Stream Description	Waste-Generating Activity	Basis for Hazardous Waste Designation	Potential EPA[b] Hazardous Waste Numbers	Potential Hazardous Waste Constituents and/or Characteristics	Regulatory Limits[c] (milligrams per liter)	Potential Underlying Hazardous Constituents[f]
S4000 – Soil/ Gravel	S4100	Soil	D&D	Acceptable Knowledge[d]	D004	Arsenic	5.0	D004
					D005	Barium hydroxide	100.0	D005
					D006	Cadmium	1.0	D006
					D007	Chromium	5.0	D007
					D008	Lead	5.0	D008
					D009	Mercury	0.2	D009
					D010	Selenium	1.0	D010
					D011	Silver	5.0	D011
					D018	Benzene	0.5	D018
					D019	Carbon tetrachloride	0.5	D019
					D021	Chlorobenzene	100.0	D021
					D022	Chloroform	6.0	D022
					D035	Methyl ethyl ketone	200.0	D035
					D038	Pyridine	5.0[g]	D038
					D039	Tetrachloroethylene	0.7	D039
					D040	Trichloroethylene	0.5	D040
					F001	Spent halogenated solvents	NA[e]	F001
					F002	Spent halogenated solvents	NA[e]	F002
					F003	Spent non-halogenated solvents	NA[e]	F003
					F005	Spent non-halogenated solvents	NA[e]	F005

Table C-5 (continued)

Summary Category Group	Waste Matrix Code	Waste Stream Description	Waste-Generating Activity	Basis for Hazardous Waste Designation	Potential EPA[b] Hazardous Waste Numbers	Potential Hazardous Waste Constituents and/or Characteristics	Regulatory Limits[c] (milligrams per liter)	Potential Underlying Hazardous Constituents[f]
S5000 - Debris	S5300	Combustible Debris	Plutonium processing operations	Acceptable Knowledge[d]	D003	Reactive	NA[e]	
					D004	Arsenic	5.0	
					D005	Barium hydroxide	100.0	
	S5400	Heterogeneous Debris	Plutonium processing operations; D&D	Acceptable Knowledge[d]	D006	Cadmium	1.0	
					D007	Chromium	5.0	
					D008	Lead	5.0	
					D009	Mercury	0.2	
					D010	Selenium	1.0	
					D011	Silver	5.0	
					D018	Benzene	0.5	
					D019	Carbon tetrachloride	0.5	
					D021	Chlorobenzene	100.0	
					D022	Chloroform	6.0	
					D035	Methyl ethyl ketone	200.0	
					D038	Pyridine	5.0[g]	
					D039	Tetrachloroethylene	0.7	
					D040	Trichloroethylene	0.5	
					D043	Vinyl Chloride	0.2	
					F001	Spent halogenated solvents	NA[e]	
					F002	Spent halogenated solvents	NA[e]	
					F003	Spent non-halogenated solvents	NA[e]	
					F004	Spent non-halogenated solvents	NA[e]	
					F005	Spent non-halogenated solvents	NA[e]	
					U080	Methylene Chloride	NA[e]	

[a] This table is based on information from the *Acceptable Knowledge Information Summary for Los Alamos National Laboratory Transuranic Waste Streams* (AKIS), (TWCP-AK-2.1-019, R.0) (LA-UR-03-4870); and from waste characterization documentation information maintained by the Facility and Waste Operations Division. Waste with EPA Hazardous Waste Numbers that are not included in the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit will not be transported to WIPP.

[b] U.S. Environmental Protection Agency.

[c] A solid waste exhibits the characteristic of toxicity if, using the Toxicity Characteristic Leaching Procedure, Test Method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (EPA, 1986), the extract from a representative sample of the waste contains any of the contaminants listed at a concentration equal to or greater than the respective value given in the New Mexico Administrative Code, Title 20, Chapter 4, Part 1, Subpart II, Part 261, Subpart C [6-14-00].

[d] Acceptable knowledge is broadly defined as process knowledge, additional characterization data, and/or facility records of analysis, U.S. Environmental Protection Agency, 1994, "Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Waste, A Guidance Manual," *OSWER 9938.4-03*, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C.

[e] Not Applicable.

[f] Potential underlying hazardous constituents (UHC) have been included, where the information is available. UHC characterization for the purpose of Land Disposal Restrictions will apply for mixed transuranic waste to be disposed of at WIPP.

[g] Quantitation limit is greater than the calculated regulatory level. The quantitation limit therefore becomes the regulatory level.

Note: Fluoride, sulfide, vanadium, and zinc are not "underlying hazardous constituents" in characteristic wastes, according to the definition in § 268.2(i). Selenium is not an underlying hazardous constituent as defined at § 268.2(i) because its Universal Treatment Standard level is greater than its Toxicity Characteristic level, thus a treated selenium waste would always be characteristically hazardous, unless it is treated to below its characteristic level.

Table C-6

Descriptions of High Explosives (HE) Waste and HE-Contaminated Waste Treated by Open Burning at LANL

Waste Description	Waste Generating Activity	Basis for Hazardous Waste Designation	Potential EPA[a] Hazardous Waste Numbers	Potential Hazardous Constituents and/or Characteristics in the Waste	Regulatory Limits[b] (milligrams per liter)
HE-Contaminated Water	Laboratory analysis; HE processing; maintenance, Environmental Restoration (ER), decontamination and decommissioning (D&D), research and development (R&D), and drilling activities	Acceptable Knowledge[c]	D003	Reactivity	NA[d]
			D005	Barium	100.0
			D006	Cadmium	1.0
			D007	Chromium	5.0
			D008	Lead	5.0
			D009	Mercury	0.2
			D011	Silver	5.0
			D018	Benzene	0.5
			D022	Chloroform	6.0
			D028	1,2-Dichloroethane	0.5
			D029	1,1-Dichloroethylene	0.7
			D030	2,4-Dinitrotoluene	0.13
			D035	Methyl ethyl ketone	200.0
			D036	Nitrobenzene	2.0
			D038	Pyridine	5.0
			D040	Trichloroethylene	0.5
			F001	Spent halogenated solvents	NA[d]
			F002	Spent halogenated solvents	NA[d]
			F004	Spent nonhalogenated solvents	NA[d]
			F005	Spent nonhalogenated solvents	NA[d]
HE-Contaminated Oil/Solvent Waste	Laboratory analysis; dissolving HE and polymers; HE production; spills; and ER, D&D, and R&D activities	Acceptable Knowledge[c]	D001	Ignitability	NA[d]
			D002	Corrosivity	NA[d]
			D003	Reactivity	NA[d]
			D005	Barium	100.0
			D006	Cadmium	1.0
			D007	Chromium	5.0
			D008	Lead	5.0
			D009	Mercury	0.2
			D011	Silver	5.0
			D018	Benzene	0.5
			D022	Chloroform	6.0
			D028	1,2-Dichloroethane	0.5
			D029	1,1-Dichloroethylene	0.7
			D030	2,4-Dinitrotoluene	0.13
			D035	Methyl ethyl ketone	200.0
			D036	Nitrobenzene	2.0

Waste Description	Waste Generating Activity	Basis for Hazardous Waste Designation	Potential EPA[a] Hazardous Waste Numbers	Potential Hazardous Constituents and/or Characteristics in the Waste	Regulatory Limits[b] (milligrams per liter)
HE-Contaminated Oil/Solvent Waste (Continued)			D038	Pyridine	5.0
			D040	Trichloroethylene	0.5
			F001	Spent halogenated solvents	NA[d]
			F002	Spent halogenated solvents	NA[d]
			F003	Spent nonhalogenated solvents	NA[d]
			F004	Spent nonhalogenated solvents	NA[d]
			F005	Spent nonhalogenated solvents	NA[d]
Solid and Scrap HE	HE-processing; R&D, ER, and D&D activities; testing operations; disposition of weapons	Acceptable Knowledge[c]	D001	Ignitability	NA[d]
			D003	Reactivity	NA[d]
			D005	Barium	100.0
			D006	Cadmium	1.0
			D007	Chromium	5.0
			D008	Lead	5.0
			D018	Benzene	0.5
			D030	2,4-Dinitrotoluene	0.13
HE-Contaminated Commercial Chemical Products	Spilled commercial chemical products contaminated with HE	Acceptable Knowledge[c]	D001	Ignitability	NA[d]
			D003	Reactivity	NA[d]
			U022	Acetone	NA[d]
			U019	Benzene	NA[d]
			U044	Chloroform	NA[d]
			U112	Ethyl acetate	NA[d]
			U154	Methanol	NA[d]
			U159	Methyl ethyl ketone	NA[d]
			U196	Pyridine	NA[d]
			U169	Nitrobenzene	NA[d]
			U220	Toluene	NA[d]
			U239	Xylene	NA[d]

Waste Description	Waste Generating Activity	Basis for Hazardous Waste Designation	Potential EPA[a] Hazardous Waste Numbers	Potential Hazardous Constituents and/or Characteristics in the Waste	Regulatory Limits[b] (milligrams per liter)
Wet HE	Filtration of HE wastewater; ER, R&D, and D&D activities; HE processing	Acceptable Knowledge[c]	D001	Ignitability	NA[d]
			D003	Reactivity	NA[d]
			D005	Barium	100.0
			D006	Cadmium	1.0
			D007	Chromium	5.0
			D008	Lead	5.0
			D009	Mercury	0.2
			D011	Silver	5.0
			D018	Benzene	0.5
			D022	Chloroform	6.0
			D028	1,2-Dichloroethane	0.5
			D029	1,1-Dichloroethylene	0.7
			D030	2,4-Dinitrotoluene	0.13
			D035	Methyl ethyl ketone	200.0
			D036	Nitrobenzene	2.0
			D038	Pyridine	5.0
			D040	Trichloroethylene	0.5
			F001	Spent halogenated solvents	NA[d]
			F002	Spent halogenated solvents	NA[d]
			F003	Spent nonhalogenated solvents	NA[d]
			F004	Spent nonhalogenated solvents	NA[d]
			F005	Spent nonhalogenated solvents	NA[d]
			K044	Wastewater sludges	NA[d]
			K045	Spent carbon	NA[d]

Waste Description	Waste Generating Activity	Basis for Hazardous Waste Designation	Potential EPA[a] Hazardous Waste Numbers	Potential Hazardous Constituents and/or Characteristics in the Waste	Regulatory Limits[b] (milligrams per liter)
HE-Contaminated Solid Waste	HE processing activities; D&D, ER, R&D, and drilling activities; and laboratory use	Acceptable Knowledge[c]	D001	Ignitability	NA[d]
			D002	Corrosivity	NA[d]
			D003	Reactivity	NA[d]
			D005	Barium	100.0
			D006	Cadmium	1.0
			D007	Chromium	5.0
			D008	Lead	5.0
			D009	Mercury	0.2
			D011	Silver	5.0
			D018	Benzene	0.5
			D022	Chloroform	6.0
			D028	1,2-Dichloroethane	0.5
			D029	1,1-Dichloroethylene	0.7
			D030	2,4-Dinitrotoluene	0.13
			D035	Methyl ethyl ketone	200.0
			D036	Nitrobenzene	2.0
			D038	Pyridine	5.0
			D040	Trichloroethylene	0.5
			F001	Spent halogenated solvents	NA[d]
			F002	Spent halogenated solvents	NA[d]
			F003	Spent nonhalogenated solvents	NA[d]
			F004	Spent nonhalogenated solvents	NA[d]
			F005	Spent nonhalogenated solvents	NA[d]
HE-Contaminated Equipment	HE processing; D&D, R&D, and ER activities; and laboratory use	Acceptable Knowledge[c]	D003	Reactivity	NA[d]
			D005	Barium	100.0
			D006	Cadmium	1.0
			D007	Chromium	5.0
			D008	Lead	5.0
			D009	Mercury	0.2
			D011	Silver	5.0
			D030	2,4-Dinitrotoluene	0.13

Waste Description	Waste Generating Activity	Basis for Hazardous Waste Designation	Potential EPA[a] Hazardous Waste Numbers	Potential Hazardous Constituents and/or Characteristics in the Waste	Regulatory Limits[b] (milligrams per liter)
HE-Contaminated Liquid Acids, Bases, and/or Inorganic Salt Solutions	Materials used as titrants, solvents, and cleaning fluids and/or material from hydrolysis research	Acceptable Knowledge[c]	D002	Corrosivity	NA[d]
			D003	Reactivity	NA[d]
			D018	Benzene	0.5
			D022	Chloroform	6.0
			D030	2,4-Dinitrotoluene	0.13
			D035	Methyl ethyl ketone	200.0
			D036	Nitrobenzene	2.0
			D038	Pyridine	5.0
			F001	Spent halogenated solvents	NA[d]
			F002	Spent halogenated solvents	NA[d]
			F003	Spent nonhalogenated solvents	NA[d]
			F004	Spent nonhalogenated solvents	NA[d]
			F005	Spent nonhalogenated solvents	NA[d]

[a] U.S. Environmental Protection Agency. Note that these constituents will likely be present only in trace amounts.

[b] A solid waste exhibits the characteristic of toxicity if, using the Toxicity Characteristic Leaching Procedure, Test Method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (EPA, 1986), the extract from a representative sample of the waste contains any of the contaminants listed at a concentration equal to or greater than the respective value given in the New Mexico Administrative Code, Title 20, Chapter 4, Part 1, Subpart II, Part 261, Subpart C [6-14-00]. These constituents are included if they are likely to be present; however, they are not expected to exceed the toxicity characteristic limits on a routine basis.

[c] Acceptable knowledge is broadly defined as process knowledge, additional characterization data, and/or facility records of analysis, U.S. Environmental Protection Agency, 1994, "Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Waste, A Guidance Manual," *OSWER 9938.4-03*, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C.

[d] Not applicable: refers to the absence of regulatory limits for ignitable, corrosive, reactive wastes, and F-, K-, and U-listed wastes. The amount of F-listed waste is expected to be trace in all waste streams, with the exception of the HE-contaminated spent solvent waste, which is expected to be 30 percent or more (by volume) solvent.

TABLE C-7

Descriptions of High Explosives (HE) Waste and HE-Contaminated Waste Treated by Open Detonation at LANL

Waste Description	Waste Generating Activity	Basis for Hazardous Waste Designation	Potential EPA[a] Hazardous Waste Numbers	Potential Hazardous Constituents and/or Characteristics in the Waste	Regulatory Limits[b] (milligrams per liter)
HE-Contaminated Solid Waste	HE processing activities; D&D, ER, R&D, and drilling activities; and laboratory use	Acceptable Knowledge[c]	D001	Ignitability	NA[d]
			D002	Corrosivity	NA[d]
			D003	Reactivity	NA[d]
			D005	Barium	100.0
			D006	Cadmium	1.0
			D007	Chromium	5.0
			D008	Lead	5.0
			D009	Mercury	0.2
			D011	Silver	5.0
			D018	Benzene	0.5
			D022	Chloroform	6.0
			D028	1,2-Dichloroethane	0.5
			D029	1,1-Dichloroethylene	0.7
			D030	2,4-Dinitrotoluene	0.13
			D035	Methyl ethyl ketone	200.0
			D036	Nitrobenzene	2.0
			D038	Pyridine	5.0
			D040	Trichloroethylene	0.5
			F001	Spent halogenated solvents	NA[d]
			F002	Spent halogenated solvents	NA[d]
			F003	Spent nonhalogenated solvents	NA[d]
			F004	Spent nonhalogenated solvents	NA[d]
			F005	Spent nonhalogenated solvents	NA[d]
Solid and Scrap HE	HE-processing; R&D, ER, and D&D activities; testing operations; disposition of weapons	Acceptable Knowledge[c]	D001	Ignitability	NA[d]
			D003	Reactivity	NA[d]
			D005	Barium	100.0
			D006	Cadmium	1.0
			D007	Chromium	5.0
			D008	Lead	5.0
			D018	Benzene	0.5
			D030	2,4-Dinitrotoluene	0.13

[a] U.S. Environmental Protection Agency. Note that these constituents will likely be present only in trace amounts.

[b] A solid waste exhibits the characteristic of toxicity if, using the Toxicity Characteristic Leaching Procedure, Test Method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (EPA, 1986), the extract from a representative sample of the waste contains any of the contaminants listed at a concentration equal to or greater than the respective value given in the New Mexico Administrative Code, Title 20, Chapter 4, Part 1, Subpart II, Part 261, Subpart C [6-14-00]. These constituents are included if they are likely to be present; however, they are not expected to exceed the toxicity characteristic limits on a routine basis.

[c] Acceptable knowledge is broadly defined as process knowledge, additional characterization data, and/or facility records of analysis, U.S. Environmental Protection Agency, 1994, "Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Waste, A Guidance Manual," *OSWER 9938.4-03*, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C.

[d] Not applicable: refers to the absence of regulatory limits for ignitable, corrosive, reactive wastes, and F-, K-, and U-listed wastes.

Table C-8

Descriptions of Waste Generated at Off-Site Facilities That May Be Received at LANL

Off-Site Waste Generating Facility	Waste Description	Waste-Generating Activity	Basis for Hazardous Waste Designation	Potential EPA Hazardous Waste Numbers	Potential Hazardous Constituents and/or Characteristics in the Waste
Sandia National Laboratories/New Mexico, Albuquerque, NM	Potential mixed transuranic waste: Combustible and noncombustible debris including metals, cellulosics, rubber, plastics, organic matrices, and inorganic materials.	To be determined	To be determined	To be determined	To be determined

Table C-9

Parameters, Characterization Methods, and Rationale for Parameter Selection for Hazardous Waste

Waste Description[a]	Parameters[b]	Characterization Methods	Rationale
Spent Solvents	– Flash point (for liquid waste) – pH (for liquid waste) – RCRA[c]-regulated metals – Volatile organic compounds (VOC) – Semivolatile organic compounds (SVOC)	– Acceptable Knowledge[d] – Sampling and Analysis	– Determine characteristic for ignitability, corrosivity, reactivity, and toxicity – Determine concentration of F-listed solvents
Contaminated Solid Wastes	– RCRA[c]-regulated metals – VOCs – SVOCs	– Acceptable Knowledge[d] – Sampling and Analysis	– Determine characteristic for ignitability, reactivity, and toxicity – Determine concentration of F-listed solvents
Paint and Related Wastes	– Flash point (for liquid waste) – RCRA[c]-regulated metals – VOCs	– Acceptable Knowledge[d] – Sampling and Analysis	– Determine characteristic for ignitability and toxicity – Determine concentration of F-listed solvents
Photographic and Photocopier Wastes	– Flash point (for liquid waste) – pH (for liquid waste) – RCRA[c]-regulated metals	– Acceptable Knowledge[d] – Sampling and Analysis	– Determine characteristic for ignitability, corrosivity, and toxicity
Corrosive Liquid Wastes	– Flash point (for liquid waste) – pH (for liquid waste) – RCRA[c]-regulated metals – VOCs – SVOCs	– Acceptable Knowledge[d] – Sampling and Analysis	– Determine characteristic for ignitability, corrosivity, and toxicity – Determine concentration of F-listed solvents
Solid Metals and Metallic Compounds	– RCRA[c]-regulated metals	– Acceptable Knowledge[d] – Sampling and Analysis	– Determine characteristic for ignitability, reactivity, and toxicity
Contaminated Noncorrosive Aqueous and Nonaqueous Solutions and Sludges	– Flash point – RCRA[c]-regulated metals – VOCs – SVOCs	– Acceptable Knowledge[d] – Sampling and Analysis	– Determine characteristic for ignitability, reactivity, and toxicity – Determine concentration of F-listed solvents
Mercury Wastes	– RCRA[c]-regulated metal	– Acceptable Knowledge[d] – Sampling and Analysis	– Determine characterisitc for toxicity – Determine the presence of a U-listed unused commercial chemical product
Used Batteries and Battery Fluids	– pH (for liquid waste) – RCRA[c]-regulated metals	– Acceptable Knowledge[d]	– Determine characteristic for corrosivity and toxicity
Unused/Off-specification Commercial Chemical Products	– Flash point (for liquid waste) – pH (for liquid waste) – RCRA[c]-regulated metals – VOCs – SVOCs	– Acceptable Knowledge[d] – Sampling and Analysis	– Determine characteristic for ignitability, corrosivity, reactivity, and toxicity – Determine presence of P-listed or U-listed unused commercial chemical products
Gas Cylinder Waste	– RCRA[c]-regulated metals – VOCs – SVOCs	– Acceptable Knowledge[d]	– Determine characterisitic for ignitability, corrosivity, and reactivity – Determine presence of D-coded and U- and P-listed wastes

Waste Description[a]	Parameters[b]	Characterization Methods	Rationale
Environmental Restoration (ER) Soils and Sludges	– RCRA[c]-regulated metals – VOCs – SVOCs	– Acceptable Knowledge[d]	– Determine characteristic for ignitability, reactivity, and toxicity – Determine concentration of F-listed solvents

Waste Description[a]	Parameters[b]	Characterization Methods	Rationale
ER Aqueous Liquids	– pH – RCRA[c]-regulated metals – VOCs – SVOCs	– Acceptable Knowledge[d]	– Determine characteristic for ignitability, corrosivity, reactivity, and toxicity – Determine concentration of F-listed solvents
ER Debris	– RCRA[c]-regulated metals – VOCs – SVOCs	– Acceptable Knowledge[d]	– Determine characteristic for ignitability, reactivity, and toxicity – Determine concentration of F-listed solvents

[a] Information contained in this column is from the Los Alamos National Laboratory waste characterization documentation database.

[b] Parameter selection is based on acceptable knowledge for each waste stream. Additional parameters may be selected for each waste stream as necessary.

[c] Resource Conservation and Recovery Act. Use of the term "RCRA-regulated metals" refers to hazardous waste as defined in the New Mexico Administrative Code, Title 20, Chapter 4, Part 1, Subpart II, 261.24 [6-14-00].

[d] Acceptable knowledge is broadly defined as process knowledge, additional characterization data, and/or facility records of analysis, U.S. Environmental Protection Agency, 1994, "Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Waste, A Guidance Manual," *OSWER 9938.4-03*, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C.

Table C-10

Parameters, Characterization Methods, and Rationale for Parameter Selection for Mixed Low-Level Waste

Waste Description[a]	Parameter[b]	Characterization Method	Rationale
Soils with Heavy Metals	– RCRA-regulated metals[c]	– Acceptable Knowledge[d] – Sample and analyze randomly selected drums in waste stream	– Determine toxicity characteristic
Environmental Restoration Soils	– RCRA-regulated metals[c] – Volatile organic compounds (VOC)	– Acceptable Knowledge[d] – Sample and analyze randomly selected drums in waste stream	– Determine presence of F-listed solvents – Determine toxicity characteristic
Inorganic Solid Oxidizers	– RCRA-regulated metals[c]	– Acceptable Knowledge[d] – Sample and analyze randomly selected drums in waste stream	– Determine toxicity characteristic – Determine characteristic for ignitability and reactivity
Lead Waste	– RCRA-regulated metals[c]	– Acceptable Knowledge[d]	– Determine characteristic for reactivity – Determine toxicity characteristic
Noncombustible Debris	– RCRA-regulated metals[c]	– Acceptable Knowledge[d]	– Determine toxicity characteristic – Determine characteristic for ignitability and reactivity
Combustible Debris	– RCRA-regulated metals[c] – VOCs	– Acceptable Knowledge[d]	– Determine toxicity characteristic – Determine presence of F-listed solvents – Determine characteristic for ignitability and reactivity
Organic-Contaminated Noncombustible Solids	– RCRA-regulated metals[c] – VOCs	– Acceptable Knowledge[d]	– Determine toxicity characteristic – Determine presence of F-listed solvents
Organic-Contaminated Combustible Solids	– RCRA-regulated metals[c] – VOCs	– Acceptable Knowledge[d]	– Determine characteristic for ignitability and reactivity – Determine toxicity characteristic

Waste Description[a]	Parameter[b]	Characterization Method	Rationale
			– Determine presence

Table C-10 (continued)

Waste Description[a]	Parameter[b]	Characterization Method	Rationale
Solid Wastes (Continued)			
Mercury Wastes	– RCRA-regulated metals[c] – VOCs	– Acceptable Knowledge[d] – Sample and analyze randomly selected drums in waste stream	– Determine toxicity characteristic – Determine presence of F-listed solvents
Unused Solid Reagent Chemical Wastes	– RCRA-regulated metals[c]	– Acceptable Knowledge[d]	– Determine characteristic for ignitability and corrosivity – Determine the presence of P- and U-listed unused commercial chemical product
Liquid Wastes			
Spent Solvents and Contaminated Solvent Mixtures	– Flash point – pH – RCRA-regulated metals[c] – VOCs – Semivolatile organic compounds (SVOC)	– Acceptable Knowledge[d] – Sampling and Analysis	– Determine characteristic for ignitability, corrosivity, and toxicity – Determine concentration of F-listed solvents
Corrosive Liquid Wastes	– Flash point – pH – RCRA-regulated metals[c] – SVOCs	– Acceptable Knowledge[d] – Sampling and Analysis	– Determine characteristic for ignitability, corrosivity, and toxicity – Determine concentration of F-listed solvents
Aqueous and Nonaqueous Liquids Contaminated with Heavy Metals and/or Organics	– Flash point – RCRA-regulated metals[c] – VOCs – SVOCs	– Acceptable Knowledge[d] – Sampling and Analysis	– Determine characteristic for ignitability and toxicity – Determine concentration of F-listed solvents
Oil Wastes	– RCRA-regulated metals[c] – VOCs – SVOCs	– Acceptable Knowledge[d] – Sampling and analysis	– Determine characteristic for toxicity – Determine concentration of F-listed solvents
Unused Liquid Reagent Chemical Wastes	– Flash point – pH	– Acceptable Knowledge[d]	– Determine characteristic for ignitability and corrosivity – Determine the presence of P- and U-listed unused commercial

Waste Description[a]	Parameter[b]	Characterization Method	Rationale
			chemical product

Gaseous Wastes

Gas Cylinder Waste	– RCRA[c]-regulated metals – VOCs – SVOCs	– Acceptable Knowledge[d]	– Determine characteristic for ignitability, corrosivity, and reactivity – Determine presence of D-coded and P- and U-listed waste

a Information contained in this column is extracted primarily from Los Alamos National Laboratory, 1995, "LANL's Federal Facility Compliance Order Site Treatment Plan Background Volume," Los Alamos National Laboratory, Los Alamos, New Mexico.

b Parameter selection is based on acceptable knowledge for each waste stream. Additional parameters may be selected for each waste stream as necessary.

c Resource Conservation and Recovery Act. Use of the term "RCRA-regulated metals" refers to hazardous waste as defined in the New Mexico Administrative Code, Title 20, Chapter 4, Part 1, Subpart II, 261.24 [6-14-00].

d Acceptable knowledge is broadly defined as process knowledge, additional characterization data, and/or facility records of analysis, U.S. Environmental Protection Agency, 1994, "Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Waste, A Guidance Manual," *OSWER 9938.4-03*, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C.

Table C-11

Parameters, Characterization Methods, and Rationale for Parameter Selection for Mixed Transuranic Waste

Summary Category Group/Description[a]	Waste Description	Parameters	Characterization Methods	Rationale
		Storage		
S3000-Homogeneous Solids	– Solidified aqueous waste (e.g., concreted/cemented aqueous waste)	– Free liquids in waste matrix – Physical form of the waste	– Visual examination – Real-time radiography (RTR) – Acceptable Knowledge[b]	– Verify physical waste form – No free liquids allowed
	– Solidified aqueous waste (e.g., dewatered sludge and chemical treatment sludge) – Solidified inorganic/organic process solids and liquids	– Resource Conservation and Recovery Act (RCRA)-regulated metals	– Sample and analyze statistically selected number of drums in waste stream – Acceptable Knowledge[b]	– Determine toxicity characteristic – Determine concentration of metals
	– Homogeneous inorganic solids – Glass/noncombustible waste – Uncemented inorganics – Absorbed organics on vermiculite	– Volatile organic compounds (VOC) in container headspace gas	– Gas chromatography / mass spectrometry (GC/MS) – Fourier transform infrared spectrometry – Gas chromatography / Flame ionization detector – Acceptable Knowledge[b]	Qualitative screening to confirm the presence of VOCs
S4000-Soils/Gravels	– Contaminated soil	– Free liquids in waste matrix – Physical form of the waste	– Visual examination – RTR – Acceptable Knowledge[b]	– Verify physical waste form – No free liquids allowed
		– RCRA-regulated metals	– Sample and analyze statistically selected number of drums in waste stream – Acceptable Knowledge[b]	– Determine toxicity characteristic – Determine concentration of metals
		– VOCs in container headspace gas	– GC/MS – Fourier transform infrared	Qualitative screening to confirm the presence of VOCs

Summary Category Group/Description[a]	Waste Description	Parameters	Characterization Methods	Rationale
			spectrometry – Gas chromatography / Flame ionization detector	
S5000-Debris Waste	– Mixed metal scrap and incidental combustibles – Combustible waste – Graphite waste – Metal waste – Glass waste	– Free liquids – Physical form of the waste – VOCs in container headspace gas – VOCs and semivolatile organic compounds	– Visual examination – RTR – Acceptable Knowledge[b]	– Verify physical waste form – No free liquids allowed – Determine compliance with land disposal restrictions (LDR) treatment standards, if applicable
	– Leaded-rubber and metal waste – High-efficiency particulate air filters – Noncombustible waste – Mixed combustible / noncombustible waste	– RCRA-regulated metals	– Gas chromatography / mass spectrometry – Fourier transform infrared spectrometry – Gas chromatography / Flame ionization detector – Acceptable Knowledge[b]	– Qualitative screening to confirm the presence of VOC – Determine compliance with LDR treatment standards, if applicable
Treatment				
L1000–Aqueous Liquids/Slurries	Evaporator bottoms solutions, aqueous waste, and laboratory solutions	– RCRA-regulated metals and corrosivity	– Acceptable Knowledge[b] – Sampling and Analysis	– Determine toxicity characteristics – Determine concentration of metals
S3000-Homogeneous Solids	Inorganic process solids and cemented inorganic process solids	– RCRA-regulated metals	– Acceptable Knowledge[b] – Sampling and Analysis	– Determine concentration of metals

[a] information in this column is based on information from the *Acceptable Knowledge Information Summary for Los Alamos National Laboratory Transuranic Waste Streams* (AKIS), TWCP-AK-2.1-019, R.0, LA-UR-03-4870, Los Alamos National Laboratory, Los Alamos, New Mexico.

[b] Acceptable knowledge is broadly defined as process knowledge, additional characterization data, and/or facility records of analysis, U.S. Environmental Protection Agency, 1994, "Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Waste, A Guidance Manual," *OSWER 9938.4-03*, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C.

Table C-12

Parameters, Characterization Methods, and Rationale for Parameter Selection for High Explosives (HE) Waste and HE-Contaminated Waste

Waste Description	Parameter[a]	Characterization Method	Rationale
HE-Contaminated Water	– Ignitability – Reactivity – Toxicity – Solvents from non-specific sources	– Acceptable Knowledge[b] – Field screening – Sampling and analysis	– Determine characteristic for ignitability and reactivity – Determine toxicity characteristic (metals and organics) – Determine the presence of F-listed solvents
HE-Contaminated Oil/Solvent Waste	– Corrosivity – Ignitability – Reactivity – Toxicity – Solvents from non-specific sources	– Acceptable Knowledge[b] – Sampling and analysis	– Determine characteristic for ignitability, corrosivity, and reactivity – Determine toxicity characteristic (organics) – Determine the presence of F-listed solvents
Solid and Scrap HE	– Ignitability – Reactivity – Toxicity	– Acceptable Knowledge[b]	– Determine characteristic for ignitability and reactivity – Determine toxicity characteristic (barium and dinitrotoluene)
HE-Contaminated Commercial Chemical Products	– Ignitability – Reactivity – Spill residues from commercial products	– Acceptable Knowledge[b]	– Determine characteristic for ignitability and reactivity – Determine the presence of U-listed wastes
Wet HE	– Ignitability – Reactivity – Toxicity – Solvents from non-specific sources – Specific source wastes (K wastes)	– Acceptable Knowledge[b]	– Determine characteristic for ignitability and reactivity – Determine toxicity characteristic (organics and metals) – Determine the presence of F- and K-listed solvents

Refer to footnotes at end of table.

Table C-12 (continued)

Waste Description	Parameter[a]	Characterization Method	Rationale
HE-Contaminated Solid Waste	– Ignitability – Corrosivity – Reactivity – Toxicity – Solvents from non-specific sources	– Acceptable Knowledge[b] – Field screening – Sampling and analysis	– Determine characteristic for ignitability, corrosivity, and reactivity – Determine toxicity characteristic (organics and metals) – Determine the presence of F-listed solvents
HE-Contaminated Equipment	– Reactivity – Toxicity	– Acceptable Knowledge[b] – Field screening – Sampling and analysis	– Determine characteristic for reactivity – Determine toxicity characteristic (dinitrotoluene and metals)
HE-Contaminated Liquid Acids, Bases, and/or Inorganic Salt Solutions	– Corrosivity – Reactivity – Toxicity – Solvents from non-specific sources	– Acceptable Knowledge[b] – Field screening – Sampling and analysis	– Determine characteristic for corrosivity and reactivity – Determine toxicity characteristic (organics) – Determine the presence of F-listed solvents

[a] Parameter selection is based on process knowledge for each waste stream. Additional parameters may be selected for each waste stream as necessary.

[b] Acceptable knowledge is broadly defined as process knowledge, additional characterization data, and/or facility records of analysis, U.S. Environmental Protection Agency, 1994, "Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Waste, A Guidance Manual," *OSWER 9938.4-03*, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C.

Table C-13

Summary of Characterization Methods for

High Explosives (HE) Waste and HE-Contaminated Waste

Parameters	Method Numbers	Test Method	Rationale
HE in the Waste	SW-846 (Appropriate analytical method from the Method 8300 series)[a]	High Performance Liquid Chromatography or Acceptable Knowledge[b]	Determine HE concentrations directly in homogeneous materials or by process information.
		DX-2 Spot Test, DeTech, or other screening methods	Determine if HE is present in the waste stream.
		Acceptable Knowledge[b]	If all surfaces of heterogeneous waste cannot be directly tested or visually examined (e.g., debris or equipment) and the waste object was potentially contaminated with HE during its use.

[a] U.S. Environmental Protection Agency, 1986 and all approved updates, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," *SW-846*.

[b] Acceptable knowledge is broadly defined as process knowledge, additional characterization data, and/or facility records of analysis, U.S. Environmental Protection Agency, 1994, "Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Waste, A Guidance Manual," *OSWER 9938.4-03*, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C.

Table C-14

Summary of Characterization Methods for Ash Generated by Open Burning[a]

Parameters	Method Numbers	Test Method	Rationale
Metals: Arsenic Barium Cadmium Chromium Lead Mercury Selenium Silver	SW-846 (1311, 6010B, 7060A, 7061A)[b] (1311, 6010B, 7080A, 7081) [b] (1311, 6010B, 7130, 7131A) [b] (1311, 6010B, 7190, 7191) [b] (1311, 6010B, 7420, 7421[d]) [b] (1311, 6010B, 7470A, 7471A)[b] (1311, 6010B, 7740, 7741A, 7742)[b] (1311, 6010B, 7760A, 7761) [b] or equivalent methods[c]	Total and/or toxicity characteristic leaching procedure (TCLP) Inductively-coupled plasma atomic emission spectroscopy Atomic absorption Manual cold vapor technique Acceptable Knowledge[d]	Determine total and/or TCLP metals concentrations in samples of solid process residues
Volatile Organic Compounds	SW-846 (8260B)	Total VOC analysis by gas chromotography/mass spectrometry (GC/MS) Acceptable Knowledge[d]	Determine total VOC concentrations for comparison with Universal Treatment Standards (UTS
Semivolatile Organic Compounds	SW-846 (8270C)	Total SVOC analysis by GC/MS Acceptable Knowledge[d]	Determine total SVOC concentrations for comparison with UTS

[a] Ash generated by open burning is characterized for all TCLP metals.

[b] U.S. Environmental Protection Agency (EPA), 1986 and all approved updates, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," *SW-846*, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, U.S. Government Printing Office, Washington, D.C..

[c] Equivalent methods, subject to EPA approval, may be substituted.

[d] Acceptable knowledge is broadly defined as process knowledge, additional characterization data, and/or facility records of analysis, U.S. Environmental Protection Agency, 1994, “Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Waste, A Guidance Manual,” *OSWER 9938.4-03*, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C.

Table C-15

Recommended Sample Containers[a], Preservation Techniques, and Holding Times[b]

Analyte Class and Sample Type	Container	Preservative	Holding Time
Volatile Organics			
Concentrated Waste Samples:	Method 5035: 40-milliliter (mL) vials with stirring bar. Method 5021: See method. Methods 5031 & 5032: 125-mL WM[c]-G[d]. Use Teflon-lined lids for all procedures.	Cool to 4º degrees Celsius (ºC)[e]	14 days
Aqueous Samples:			
No Residual Chlorine Present	Methods 5030, 5031, & 5032: 2 x 40-mL vials with Teflon-lined septum caps.	Cool to 4ºC and adjust pH[f] to less than 2 with H_2SO_4, HCl, or solid $NaHSO_4$	14 days
Residual Chlorine Present	Methods 5030, 5031, & 5032: 2 x 40-mL vials with Teflon-lined septum caps.	Collect sample in a 125-mL container which has been pre-preserved with 4 drops of 10% sodium thiosulfate solution. Gently swirl to mix sample and transfer to a 40-mL volatile organic analysis (VOA) vial. Cool to 4ºC and adjust pH to less than 2 with H_2SO_4, HCl, or solid $NaHSO_4$	14 days
Acrolein and Acrylonitrile	Methods 5030, 5031, & 5032: 2 x 40-mL vials with Teflon-lined septum caps.	Adjust to pH of 4-5. Cool to 4ºC	14 days
Soil/Sediments and Sludges:	Method 5035: 40-mL vials with stirring bar. Method 5021: See method. Methods 5031 & 5032: 125-mL WM[c]-G[d]. Use Teflon-lined lids for all procedures.	See the individual method	14 days

Refer to footnotes at end of table.

Table C-15 (continued)

Analyte Class and Sample Type	Container	Preservative	Holding Time
Semivolatile Organics/Organochlorine Pesticides and Herbicides			
Concentrated Waste Samples:	125 mL WM[c]-G[d] with Teflon-lined lid	None	Samples must be extracted within 14 days and analyzed within 40 days following extraction.
Soil/Sediments and Sludges:	250 mL WM[c]-G[d] with Teflon-lined lid	Cool to 4ºC	Samples must be extracted within 14 days and analyzed within 40 days following extraction.
Liquid Samples:			
No Residual Chlorine Present	1-gallon (gal.), 2 x 0.5 gal., or 4 x 1 liter (L) AG[g] container with Teflon[ϑ]-lined lid	Cool to 4ºC	Samples must be extracted within 7 days and extracts analyzed within 40 days following extraction
Residual Chlorine Present	1-gal., 2 x 0.5 gal., or 4 x 1-L AG[g] with Teflon[ϑ]-lined lid	Add 3-mL 10% sodium thiosulfate solution per gallon (or 0.008%). Addition of sodium thiosulfate solution to sample container may be performed in the laboratory prior to field use. Cool to 4ºC.	Samples must be extracted within 7 days and extracts analyzed within 40 days following extraction
Metals			
Aqueous Samples:			
Metals (except hexavalent chromium and mercury)	1-L P[h] or G[d]	Add nitric acid to adjust pH to less than 2.	180 days
Hexavalent chromium	500-mL P[h] or G[d]	Cool to 4ºC	24 hours
Mercury	500-mL P[h] or G[d]	Add nitric acid to adjust pH to less than 2.	28 days
Soil/Sediments and Sludges:			
Metals (except hexavalent chromium and mercury)	500-mL WM[c]-P[h] or G[d]	Cool to 4ºC	180 days
Hexavalent chromium	500-mL WM[c]-P[h] or G[d]	Cool to 4ºC	Not established - analyze as soon as possible.
Mercury	500-mL WM[c]-P[h] or G[d]	Cool to 4ºC	28 days

[a] Smaller sample containers may be required due to health and safety concerns associated with potential radiation exposure, transportation requirements, and waste management considerations.

[b] Information primarily from "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," *SW-846,* U.S. Environmental Protection Agency, 1986 and all approved updates.

[c] WM = Wide-mouth

[d] G - Glass

[e] Adjust to pH of less than 2 with sulfuric acid, hydrochloric acid, or solid sodium bisulfate.

[f] A term used to describe the hydrogen-ion activity of a system.

[g] AG = Amber glass

[h] P = Polyethylene

Table C-16

Summary of Characterization Methods for Hazardous Waste

Parameter	Method Numbers	Test Methods	Rationale
Volatile organic compounds (VOC) in waste matrix: Spent halogenated solvents Spent nonhalogenated solvents	ASTM Method D4547-91[a] U.S. EPA/540/4-91/001[b] SW-846 (1311, 8260B, 8275A)[c] or equivalent methods[d] Methods included in 20.4.1 NMAC §§ 265.1084(a)(2), (a)(3), and (a)(4)	Total and/or toxicity characteristic leaching procedure (TCLP) VOC analysis by gas chromotography/mass spectrometry (GC/MS) Semivolatile organic compound (SVOC) analysis by thermal extraction/gas chromatography/mass spectrometry (TE/GC/MS) Acceptable Knowledge[f]	Determine total and/or TCLP and SVOC/VOC concentration in samples of solids or liquids
SVOCs in waste:	SW-846 (1311 and 8270C)[c] or equivalent methods[d]	Total or TCLP SVOC analysis by GC/MS Acceptable Knowledge[f]	Determine total and/or TCLP and SVOC concentration in samples of solids or liquids
Resource Conservation and Recovery Act-regulated metals in waste: Arsenic Barium Cadmium Chromium Lead Mercury Selenium Silver	SW-846 (1311, 6010B, 7060A, 7061A)[c] (1311, 6010B, 7080A, 7081)[c] (1311, 6010B, 7130, 7131A)[c] (1311, 6010B, 7190, 7191)[c] (1311, 6010B, 7420, 7421)[c] (1311, 6010B, 7470A, 7471A, 7472)[c] (1311, 6010B, 7740, 7741A, 7742)[c] (1311, 6010B, 7760A, 7761)[c] or equivalent methods[d]	Total and/or TCLP Inductively-coupled plasma atomic emission spectroscopy Atomic absorption Manual cold vapor atomic absorption Anodic stripping voltammetry Acceptable Knowledge[f]	Determine total and/or TCLP concentration in samples of solids or liquids
Reactive Sulfide	SW-846, Test Method to Determine Hydrogen Sulfide Released from Wastes[e] SW-846 (9030B, 9031, 9034)[c] or equivalent methods[d]	Colorimetric, titrametric, or spectrophotometric measurement of hydrogen sulfide released from waste following reflux distillation under acidic conditions	Determine concentration of reactive sulfides
Ignitability (Flash Point)	SW-846 (1010, ~~1020A~~1020B, 1030)[c] or equivalent methods[d]	Pensky-Martens closed cup Setaflash closed cup Ignitability of solids	Determine ignitablity
pH (Corrosivity)	SW-846 (~~9040B~~9040C, 9041A, 9045C)[c] or equivalent methods[d]	pH electrometric measurement pH paper Soil and waste pH	Determine corrosivity

[a] American Society for Testing and Materials, 1991, "Standard Practice for Sampling Waste and Soils for Volatile Organic Compounds," ASTM D4547-91, *Annual Book of ASTM Standards*, Philadelphia, Pennsylvania, American Society for Testing and Materials.

[b] U.S. Environmental Protection Agency (EPA), 1991, "Soil Sampling and Analysis for Volatile Organic Compounds," EPA 154014-91001, Office of Research and Development.

[c] U.S. Environmental Protection Agency, 1986 and all approved updates, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," *SW-846*.

[d] Equivalent methods subject to EPA approval may be substituted.

[e] *SW-846*, Section 7.3.4.2 contains specialized methods to determine if a sulfide-containing waste exhibits the reactivity characteristic.

[f] Acceptable knowledge is broadly defined as process knowledge, additional characterization data, and/or facility records of analysis, U.S. Environmental Protection Agency, 1994, "Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Waste, A Guidance Manual," *OSWER 9938.4-03*, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C.

Table C-17

Summary of Characterization Methods for Mixed Low-Level Waste

Parameter	Method Numbers	Test Method	Rationale
Solid Wastes			
Volatile organic compounds (VOC) in waste matrix: Spent halogenated solvents Spent nonhalogenated solvents	ASTM Method D4547-91[a] U.S. EPA/540/4-91/001[b] SW-846 (1311, 8260B, 8275A)[c] or equivalent methods[d] Methods included in 20.4.1 NMAC §§ 265.1084(a)(2), (a)(3), and (a)(4)	Total and/or toxicity characteristic leaching procedure (TCLP) VOC analysis by gas chromotography/mass spectrometry (GC/MS) Semivolatile organic compounds (SVOC) analysis by thermal extraction/gas chromatography/mass spectrometry (TE/GC/MS) Acceptable Knowledge[e]	Determine total and/or TCLP and VOC concentration in samples of solid process residues and soils
SVOCs in waste:	SW-846 (1311 and 8270C)[c] or equivalent methods[d]	Total and/or TCLP SVOC analysis by GC/MS Acceptable Knowledge[e]	Determine total and/or TCLP and SVOC concentration in samples of solid process residues and soils
Resource Conservation and Recovery Act (RCRA)-regulated metals in waste: Arsenic Barium Cadmium Chromium Lead Mercury Selenium Silver	SW-846 (1311, 6010B, 7060A, 7061A)[c] (1311, 6010B, 7080A, 7081)[c] (1311, 6010B, 7130, 7131A)[c] (1311, 6010B, 7190, 7191)[c] (1311, 6010B, 7420, 7421)[c] (1311, 6010B, 7470A, 7471A, 7472)[c] (1311, 6010B, 7740, 7741A, 7742)[c] (1311, 6010B, 7760A, 7761)[c] or equivalent methods[d]	Total and/or TCLP Inductively-coupled plasma atomic emission spectroscopy Atomic absorption Manual cold vapor atomic absorption Acceptable Knowledge[e]	Determine total and/or TCLP concentration in samples of solid process residues and soils
Liquid Wastes			
VOCs in waste matrix: Spent halogenated solvents Spent nonhalogenated solvents	ASTM Method D4547-91[a] EPA/540/4-91/001[b] SW-846 (1311 and 8260B)[c] or equivalent methods[d]	Total and/or TCLP VOC analysis by GC/MS Acceptable Knowledge[e]	Determine total and/or TCLP and VOC concentration in samples of liquid
SVOCs in waste:	SW-846 (1311 and 8270B)[c] or equivalent methods[d]	Total and/or TCLP SVOC analysis by GC/MS Acceptable Knowledge[e]	Determine total and/or TCLP and SVOC concentration in samples of liquid

Parameter	Method Numbers	Test Method	Rationale
RCRA-regulated metals in waste: Arsenic Barium Cadmium Chromium Lead Mercury Selenium Silver	SW-846 (1311, 6010B, 7060A, 7061A)[c] (1311, 6010B, 7080A, 7081)[c] (1311, 6010B, 7130, 7131A)[c] (1311, 6010B, 7190, 7191)[c] (1311, 6010B, 7420, 7421)[c] (1311, 6010B, 7470A, 7471A, 7472)[c] (1311, 6010B, 7740, 7741A, 7742)[c] (1311, 6010B, 7760A, 7761)[c] or equivalent methods[d]	Total and/or TCLP Inductively-coupled plasma atomic emission spectroscopy Atomic absorption Manual cold vapor atomic absorption Anodic stripping voltammetry Acceptable Knowledge[e]	Determine total and/or TCLP concentration in samples of liquid

Refer footnotes at end of table.

Parameter	Method Numbers	Test Method	Rationale
Liquid Wastes (Continued)			
Ignitability (Flash Point)	SW-846 (1010, ~~1020A~~1020B, 1030)[c] or equivalent methods[d]	Pensky-Martens closed cup Setaflash closed cup Acceptable Knowledge[e]	Determine ignitability
pH (Corrosivity)	SW-846 (~~9040B~~9040C, 9041A, 9045C)[c] or equivalent methods[d]	pH electrometric Measurement pH paper Soil and waste pH Acceptable Knowledge[e]	Determine corrosivity

[a] American Society for Testing and Materials, 1991, "Standard Practice for Sampling Waste and Soils for Volatile Organic Compounds," ASTM D4547-91, *Annual Book of ASTM Standards*, Philadelphia, Pennsylvania, American Society for Testing and Materials.

[b] U.S. Environmental Protection Agency (EPA), 1991, "Soil Sampling and Analysis for Volatile Organic Compounds," EPA 154014-91991, Office of Research and Development.

[c] U.S. Environmental Protection Agency, 1986 and all approved updates, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," *SW-846*.

[d] Equivalent methods, subject to EPA approval, may be substituted.

[e] Acceptable knowledge is broadly defined as process knowledge, additional characterization data, and/or facility records of analysis, U.S. Environmental Protection Agency, 1994, "Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Waste, A Guidance Manual," *OSWER 9938.4-03*, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C.

Table C-18

Summary of Characterization Methods for Mixed Transuranic Waste

Parameter	Method Numbers	Test Methods	Rationale
Storage			
Physical Waste Form (Free liquids in waste matrix)		Waste inspection procedures Real-time radiography Visual examination Acceptable Knowledge[e]	Verify waste container contents
Volatile organic compounds (VOC) in waste matrix: Spent halogenated solvents Spent nonhalogenated solvents	ASTM Method D4547-91[a] U.S. EPA/540/4-91/001[b] SW-846 (1311, 8260B, 8275A)[c] or equivalent methods[d] Methods included in 20.4.1 NMAC §§ 265.1084(a)(2), (a)(3), and (a)(4)	Total and/or toxicity characteristic leaching procedure (TCLP) VOCs in container headspace gas VOC analysis by gas chromatography/mass spectrometry (GC/MS) Semivolatile organic compound (SVOC) analysis by thermal extraction/gas chromatography/mass spectrometry (TE/GC/MS) Acceptable Knowledge[e]	Determine the presence or absence of VOCs in samples
SVOCs in waste	SW-846 (1311 and 8270C)[c] or equivalent methods[d]	Total and/or TCLP SVOC analysis by GC/MS Acceptable Knowledge[e]	Determine the presence or absence of SVOCs in samples
Resource Conservation and Recovery Act (RCRA)-regulated metals in waste: Arsenic Barium Cadmium Chromium Lead Mercury Selenium Silver	SW-846 (1311, 6010B, 7060A, 7061A)[c] (1311, 6010B, 7080A, 7081)[c] (1311, 6010B, 7130, 7131A)[c] (1311, 6010B, 7190, 7191)[c] (1311, 6010B, 7420, 7421)[c] (1311, 6010B, 7470A, 7471A, 7472)[c] (1311, 6010B, 7740, 7741A, 7742)[c] (1311, 6010B, 7760A, 7761) or equivalent methods[d]	Total and/or TCLP Inductively-coupled plasma atomic emission spectroscopy Atomic absorption Manual cold vapor atomic absorption Anodic stripping voltammetry Acceptable Knowledge[e]	Determine total and/or TCLP concentration in samples
Ignitability	SW-846 (1010, ~~1020A~~1020B, 1030)[c] or equivalent methods[d]	Pensky-Martens closed cup Setaflash closed cup Ignitabililty of Solids Acceptable Knowledge[e]	Determine ignitability
pH (Corrosivity)	SW-846 (~~9040B~~9040C, 9041A, 9045C) or equivalent methods[d]	pH electrometric measurement Acceptable Knowledge[e]	Determine corrosivity

Parameter	Method Numbers	Test Methods	Rationale

Refer to footnotes at end of table.

Parameter	Method Numbers	Test Methods	Rationale
Treatment			
RCRA-regulated metals in waste: Arsenic Barium Cadmium Chromium Lead Mercury Silver	SW-846 (1311, 6010B, 7060A, 7061A)[c] (1311, 6010B, 7080A, 7081)[c] (1311, 6010B, 7130, 7131A)[c] (1311, 6010B, 7190, 7191)[c] (1311, 6010B, 7420, 7421)[c] (1311, 6010B, 7470A, 7471A, 7472)[c] (1311, 6010B, 7760A, 7761)[c] or equivalent methods[d]	Total and/or TCLP Inductively-coupled plasma atomic emission spectroscopy Atomic absorption Manual cold vapor atomic absorption Acceptable Knowledge[e]	Determine total and/or TCLP metals concentration in samples
pH (Corrosivity)	SW-846 (9040B, 9041A, 9045C) or equivalent methods[d]	pH electrometric measurement Acceptable Knowledge[e]	Determine corrosivity

[a] American Society for Testing and Materials, 1991, "Standard Practice for Sampling Waste and Soils for Volatile Organic Compounds," ASTM D4547-91, *Annual Book of ASTM Standards*, Philadelphia, Pennsylvania, American Society for Testing and Materials.

[b] U.S. Environmental Protection Agency (EPA), 1991, "Soil Sampling and Analysis for Volatile Organic Compounds," EPA 154014-91001, Office of Research and Development.

[c] U.S. Environmental Protection Agency, 1986 and all approved updates, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," *SW-846*.

[d] Equivalent methods, subject to EPA approval, may be substituted.

[e] Acceptable knowledge is broadly defined as process knowledge, additional characterization data, and/or facility records of analysis, U.S. Environmental Protection Agency, 1994, "Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Waste, A Guidance Manual," *OSWER 9938.4-03*, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C.

Table C-19

Description of Cementation Waste Streams at Technical Area 55

Summary Category Group	Waste Description	Waste-Generating Activity	Basis for Hazardous Waste Designation	Potential EPA Hazardous Waste Numbers	Potential Hazardous Constituents in the Waste	Regulatory Limits[a] (milligrams per liter)
L1000 – Aqueous Liquids/Slurries	Evaporator bottoms solutions, aqueous waste, and laboratory solutions	Process residue from evaporator bottoms and other discardable solutions.	Acceptable Knowledge[b]	D002	Nitric acid	NA
				D004	Arsenic	5.0
				D005	Barium hydroxide	100.0
				D006	Cadmium	1.0
				D007	Chromium	5.0
				D008	Lead	5.0
				D009	Mercury	0.2
				D011	Silver	5.0
S3000 – Homogenous Solids	Inorganic process solids and cemented inorganic process solids	Process residue from evaporator bottoms and other discardable solutions; process-leached solids, ash, filter cakes, salts, metal oxides, and fines generated as a result of plutonium-processing	Acceptable Knowledge[b]	D004	Arsenic	5.0
				D006	Cadmium	1.0
				D007	Chromium	5.0
				D008	Lead	5.0
				D009	Mercury	0.2

[a] A solid waste exhibits the characteristic of toxicity if, using the Toxicity Characteristic Leaching Procedure, Test Method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," *EPA-SW-846*, Office of Solid Waste and Emergency Response, U.S. Government Printing Office, Washington, D.C., the extract from a representative sample of the waste contains any of the contaminants listed at a concentration equal to or greater than the respective value given in the New Mexico Administrative Code, Title 20, Chapter 4, Part 1, Subpart II, 261.24, revised June 14, 2000.

[b] Acceptable knowledge is broadly defined as process knowledge, supplemental waste analysis data, and/or facility records of analysis, U.S. Environmental Protection Agency, 1994, "Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Waste, A Guidance Manual," *OSWER 9938.4-03*, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C.

EPA = U.S. Environmental Protection Agency

NA = Not applicable

Appendix H

Permit Attachment D- Contingency Plan with Editing Marks

ATTACHMENT D

CONTINGENCY PLAN

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LIST OF ABBREVIATIONS/ACRONYMS

20.4.1 NMAC	New Mexico Administrative Code, Title 20, Chapter 4, Part 1
BEP	building emergency plan
CAS	Central Alarm Station
DOE	U.S. Department of Energy
~~DX~~	~~Dynamic Experimentation~~
EM&R	Emergency Management and Response
EMP	Emergency Management Plan
EOC	Emergency Operations Center
ENV	Environmental Protection Division
HAZMAT	Hazardous Materials
~~HMGS~~	~~Hazardous Materials Group Supervisor~~
~~HSR~~	~~Health, Safety, and Radiation Protection~~
~~HSR-1~~	~~Health Physics Operations Group~~
~~HSR-2~~	~~Occupational Medicine Group~~
~~HSR-5~~	~~Industrial Hygiene and Safety Group~~
IC	Incident Commander
ICS	Incident Command System
KSL	KBR-Shaw-LATA
LACFD	Los Alamos County Fire Department
LACPD	Los Alamos County Police Department
LAMC	Los Alamos Medical Center
LANL	Los Alamos National Laboratory
LASO	Los Alamos Site Office
NAWAS	National Warning System
NIIMS	National Interagency Incident Management System
NMED	New Mexico Environment Department
NNSA	National Nuclear Security Administration
PA	public address
PPE	personal protective equipment
~~PS~~	~~Performance Surety~~
~~PTLA~~	~~Protection Technology Los Alamos~~

LIST OF ABBREVIATIONS/ACRONYMS
(Continued)

~~RRES~~	~~Risk Reduction and Environmental Stewardship~~
~~RRES-MAQ~~	~~Meteorology and Air Quality Group~~
~~RRES-SWRC~~	~~Solid Waste Regulatory Compliance Group~~
~~RRES-WQH~~	~~Water Quality and Hydrology Group~~
~~S~~	~~Security and Safeguards~~
~~S-10~~	~~Hazardous Materials Response Group~~
TA	technical area

ATTACHMENT D
GENERAL CONTINGENCY PLAN

This Attachment presents contingency measures applicable to all hazardous or mixed waste units at Los Alamos National Laboratory (LANL). This Contingency Plan is intended to meet the requirements specified in the New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20.4.1 NMAC), Subpart V, Part 264, Subpart D, revised June 14, 2000 [6-14-00], and 20.4.1 NMAC § 270.14(b)(7) [6-14-00], for hazardous waste treatment and storage facilities. In addition, this Plan is consistent with the LANL Emergency Management Plan (EMP) (LANL, 2002), prepared by ~~the~~ LANL Emergency Management and Response (EM&R) ~~Office~~personnel. The provisions of this Plan will be carried out immediately to minimize hazards whenever there is a fire, explosion, or release of hazardous or mixed waste or hazardous or mixed waste constituents that could threaten human health or the environment, as required by 20.4.1 NMAC § 264.51(b) [6-14-00]. When necessary, additional Contingency Plan information will be provided in Attachment E of TA-specific permit applications, permit modification requests, or permit renewal applications. Individual facilities at LANL may have their own facility-specific emergency plans and/or procedures to follow in the event of a fire, explosion, or release of hazardous and/or mixed waste.

D.1 HAZARDOUS AND MIXED WASTE EMERGENCY RESPONSE RESOURCES [20.4.1 NMAC §§ 264.52(C) AND 264.53]

The management of hazardous and mixed waste emergency incidents at LANL resides within ~~the~~ EM&R ~~Office~~personnel~~, which is part of the Security and Safeguards (S) Division~~. During an emergency situation, line management (i.e., the Group Leader of the affected area) works with the Duty Emergency Manager from ~~the~~ EM&R ~~Office~~personnel~~~~. The Emergency Manager has primary responsibility for managing emergency response operations, making appropriate notifications, activating the emergency response organizations, and proceeding to the scene. The Emergency Manager has authority to assume the role of Incident Commander (IC) during an emergency and typically assumes full responsibility for management of the emergency response operations at the scene. (Personnel from other organizations, such as the Federal Bureau of Investigation or the Los Alamos County Fire Department [LACFD], may also assume the role of IC, depending upon the type of emergency and responding organizations.) Additional LANL resources that may provide assistance in an emergency include personnel from ~~the Health, Safety, and Radiation Protection (HSR) Division, Risk Reduction~~health physics,

industrial hygiene, environment compliance, emergency response, and ~~Environmental Stewardship (RRES) Division~~radiation protection personnel~~, and Performance Surety (PS) Division~~ at LANL. These ~~groups~~personnel as well as other resources~~groups in S Division~~ are discussed in Sections D.1.2, D.1.3, and D.1.6.

Laboratory-contracted support services and other agencies are also available for assistance during emergencies. These are discussed in Section D.1.5 and include the contracted services ~~of Protection Technology Los Alamos (PTLA)~~ for security and the LACFD. Facility maintenance and heavy equipment operation are provided by KBR-Shaw-LATA (KSL). These contracted services, if changed, will be replaced and/or supplemented with functionally equivalent contracted services required to assume the same duties and responsibilities described in this section. Other outside response agencies are discussed in Section D.1.7 and include the Los Alamos County Police Department (LACPD) and the Los Alamos Medical Center (LAMC). The LACPD and the LAMC each provide assistance under a memorandum of understanding with the U.S. Department of Energy (DOE).

The Laboratory, as required by DOE and the State of New Mexico, uses the Incident Command System (ICS) in response to all emergencies. The ICS is based on the on-scene management structure protocols of the National Interagency Incident Management System (NIIMS). The NIIMS is a national standard that provides consistency in terminology/methodology and allows for an integrated emergency response both locally and nationally, if necessary. Consequently, this Contingency Plan may undergo modification.

The IC (e.g., Duty Emergency Manager) coordinates all groups and agencies responding to the emergency and personnel operating at the scene using the ICS. The general emergency notification structure, illustrated on Figure D-1, is designed to expand and contract, as appropriate, to include the response groups/agencies needed to address any particular emergency.

The IC may appoint and utilize a network of support personnel to assess, plan for, and mitigate emergencies. These personnel can include, but are not limited to, a Safety Officer, a Public Information Officer, and a Liaison Officer that report directly to the IC and are responsible for issues related to safety, information, and the interaction of various groups associated with the overall emergency. Also reporting directly to the IC are an Operations Section Chief, Logistics

Section Chief, Planning Section Chief, and an Administrative Section Chief. The Operations Section Chief oversees the Fire Branch and the Emergency Medical Services Branch, and is responsible for the actual emergency response. The Logistics Section Chief is responsible for providing support personnel and equipment necessary for the emergency response. The Planning Section Chief is responsible for planning the active mitigation and recovery for the emergency. The Administrative Section Chief is responsible for keeping records of expenditures. In some instances, some or all of these positions may be activated, as the emergency warrants. During an emergency at LANL, assistance may be provided to the IC and the IC's appointees by a large variety of response groups/agencies. The responsibilities and/or assistance available from the various response groups/agencies are listed in Table D-1 and discussed briefly in Sections D.1.2 through D.1.7.

A copy of this Contingency Plan and any revisions will be provided to each of the emergency response groups/agencies (including the LACPD, LACFD, and LAMC). LANL's ~~Solid Waste Regulatory Compliance Group (RRES-SWRC) is~~hazardous waste compliance personnel are responsible for the controlled distribution of this plan. Amendments to this plan are discussed in Section D.12.

D.1.1 EMERGENCY MANAGEMENT AND RESPONSE OFFICE [20.4.1 NMAC §§ 264.52(D) AND 264.55]

The Director of LANL has delegated the authority and responsibility for administering and implementing LANL's emergency management program to the ~~S~~Emergency Response Division, which includes ~~the~~ EM&R ~~Office~~personnel. The EM&R Office coordinates and issues LANL's EMP and provides response coordination for emergencies. ~~The~~ EM&R ~~Office personnel~~ also provides~~s~~ a 24-hour Duty Emergency Manager to respond to emergencies, including hazardous and mixed waste releases. The LANL Emergency Manager is the functional equivalent of the Emergency Coordinator (20.4.1 NMAC § 264.55 [6-14-00]). ~~The~~ EM&R ~~Office~~~~personnel~~ maintains~~s~~ an Emergency Operations Center (EOC) in a ready condition, should a center be required. The primary EOC is located at TA-69, Building 33 (TA-69-33). An alternate EOC is located at TA-49-113. Should an EOC be activated during an emergency, additional emergency personnel can be requested by the IC through the EOC.

Assignment as the Duty (i.e., primary) Emergency Manager is rotated. The Duty Emergency Manager can be reached 24 hours a day by contacting the EM&R Office at 667-6211 or the Central Alarm Station (CAS) operator (911).

The Duty Emergency Manager will respond to emergency incidents involving the release of hazardous or mixed waste to the environment, including spills, fires, and explosions. With input from the appropriate LANL groups, the Duty Emergency Manager will initially assess the possible hazards to human health or the environment and, if assuming incident command, will use whatever response personnel and/or emergency equipment necessary to control and contain the waste. In the event of an emergency, the Emergency Manager typically becomes the IC with full responsibility for field activities (including safety, operations, and planning, or establishing these positions within the ICS). As described previously, the exception to this is when on-site personnel can adequately address the emergency and maintain incident command internally. At the scene of the emergency, the IC will assemble the ICS, as required, for response to the emergency.

The Duty Emergency Manager responding to an emergency will have access to a copy of the appropriate building emergency plan(s) (BEP) for the area in which the incident is occurring. These plans are maintained by the facility manager where a waste management unit is located and are available at the ~~EM&R Office~~EOC at TA-~~59~~69; they are also located on site for use by emergency response personnel. The various response groups will obtain specific information relating to the facilities involved (including the layout of all affected buildings; the location of evacuation routes, equipment, and personnel; properties of the materials/wastes managed at the facility; and the hazards associated with these materials/wastes) from the BEP(s) and other site-specific information.

Listed below is the name, address, and phone number of the current Primary and Alternate Emergency Coordinator, as required by 20.4.1 NMAC § 264.52(d) [6-14-00].

Primary	~~Alternate~~
Brenda Anderson~~Dennis~~	~~Armstrong William Purtymun~~
~~998 Capulin Road~~ 3926 A Alabama	~~1813 Mountain View Place~~
Los Alamos, NM 87544	~~Los Alamos, NM 87544~~
(H) 505-662-~~35~~44173	~~(H) 505-662-9886~~
(W) 505-667-6211	~~(W) 505-667-6211~~

Alternates

Manny L'Esperance
13 Pasel Paltron
Los Alamos, NM 87544
(H) 505-455-9138
(W) 505-667-6211

Roy Van Tiem
114 Azure Drive
Los Alamos, NM 87544
(H) 505-672-6296
(W) 505-667-6211

Ruth Larkin
315 Joya Loop
Los Alamos, NM 87544
(H) 505-672-9860
(W) 505-667-6211

To assure timely notifications and immediate response during an emergency, one must call 911 or 667-6211 to obtain the on-call Duty Emergency Manager.

D.1.2 Hazardous Materials Response~~ Group~~

The Hazardous Materials (HAZMAT) Team is ~~comprised of personnel from the Hazardous Materials Response Group (S-10). The HAZMAT Team is~~ responsible for the aggressive mitigation of chemical, radiological, hazardous waste, and mixed waste emergencies, including field decontamination of responders and response equipment. At the request of the IC, the HAZMAT Team may provide limited field decontamination support for victims. The HAZMAT Team is capable of providing a decontamination station at the scene of a hazardous material incident to process people working in a contaminated area and is prepared to perform decontamination of personnel. LANL standards require that the HAZMAT Team meet the training criteria for emergency response personnel specified in the Code of Federal Regulations, Title 29, §1910.120(q)(6)(iii), (iv), and (v). The HAZMAT Team acts as part of the ICS reporting through the HAZMAT ~~Group~~ Supervisor~~ (HMGS)~~ via the Operations Section Chief. The LANL ~~HMGS~~ HAZMAT Supervisor coordinates the HAZMAT Team and radiological field monitoring activities.

During an emergency response, the HAZMAT Team~~S-10~~ may also provide site field monitoring to determine the nature and extent of contamination, provide information on correct handling of chemicals, make recommendations on protective clothing and equipment, and provide exposure and treatment information to responders. To operate effectively, ~~S-10~~the HAZMAT Team may obtain resources from ~~HSR~~environmental monitoring groups, such as ~~the Health Physics Operations Group (HSR-1)~~health physics and ~~the I~~industrial ~~H~~hygiene personnel~~and Safety Group (HSR-5)~~.

D.1.3 Environmental Protection~~RRES~~ Division Response~~ Groups~~

At the scene, representatives and technical advisors from ~~RRES~~ Environmental Protection Division (ENV) and other response personnel are coordinated by the IC. In addition to their post-emergency duties, they may also be responsible for on-scene emergency operations such as planning. Depending on the type of emergency and the associated hazards, an individual from the most relevant group in the ~~RRES Division~~ENV will assume the position of the Environmental Safety and Health Advisor, will provide technical support, and will ensure LANL compliance with applicable federal, state, and local regulations.

D.1.3.1 Ecology PersonnelGroup

The Ecology personnelGroup provides field surveys of soil, foodstuffs, and biota to determine environmental effects of exposure after an emergency.

D.1.3.2 Meteorology and Air Quality PersonnelGroup

The Meteorology and Aair Qquality Group (RRES-MAQ)personnel provides field surveys of air to determine environmental impacts and dose equivalent to members of the public after a radiological emergency. In addition, RRES-MAQthey provides expertise in meteorology to project short- and long-term environmental effects of emergency conditions.

D.1.3.3 Hazardous Waste Compliance PersonnelSolid Waste Regulatory Compliance Group

Hazardous waste compliance personnelRRES-SWRC provides guidance on regulatory requirements for proper treatment, storage, and transportation of hazardous and mixed wastes to other LANL groups. After an emergency, RRES-SWRChazardous waste compliance personnel may provides field sampling (e.g., of soil, spills, or potentially hazardous waste) to determine environmental effects of exposure.

D.1.3.4 Water Quality and Hydrology PersonnelGroup

After an emergency, the Water qQuality and Hhydrology Group (RRES-WQH)personnel provides sampling of surface water runoff and sediments to determine the environmental effects of an emergency and performs assessments for regulatory reporting requirements. RRES-WQHTheyPersonnel also provides expertise in hydrogeology to establish short- and long-term environmental effects of emergency conditions.

D.1.4 Other LANL Response Resources

Emergency response personnel from the Plutonium Manufacturing andNuclear Materials Technology Division at TA-55 have been trained to respond to emergencies at that facility. Dynamic and Energetic MaterialsExperimentation (DEX) Division personnel are responsible for the hazardous waste management units at TA-14, TA-36, and TA-39. Dynamic and XEnergetic personnel responsible for these units are trained in emergency procedures and may provide information and/or assistance during emergencies involving high explosive waste. High Explosives Engineering Sciences and Applications Division personnel are responsible for hazardous waste management units at TA-16. These personnel are also trained in emergency procedures and may provide information and/or assistance during emergencies involving units

at TA-16. Personnel from ~~the Facilities and~~ Waste ~~Operations Division~~ Disposition Project may provide guidance on proper treatment, storage, and transportation of hazardous and mixed waste at TA-50 and TA-54.

D.1.5 Contracted Response ~~Groups~~

Contracted response groups' representatives may report directly to the IC Post, if requested. If the IC deems it necessary, the IC may designate an Operations Section Chief to aid in the coordination and direction of these groups. In addition, contracted response groups may report to a staging area, with a representative going either to the IC Post or, if activated, to the EOC.

D.1.5.1 Security Services~~Protection Technology Los Alamos~~

~~PTLA is the subcontractor for LANL security and~~ Security personnel provide~~s~~ this service under contract to LANL. During an emergency, these~~PTLA~~ activities include maintaining security, directing traffic within LANL, and controlling access to the emergency scene. Security personnel~~PTLA~~ maintain~~s~~ the necessary equipment (such as crowd-control equipment and patrol vehicles) to perform these functions.

D.1.5.2 KBR-Shaw-LATA (KSL)

KSL provides a maintenance support force under contract to LANL. This support force is under LANL's direction in an emergency. KSL also provides a representative to LANL in the event of an emergency and participates, as necessary, in post-emergency cleanup under the direction of a Recovery Manager designated by the IC. The duties of the Recovery Manager are discussed in Section D.10.

D.1.5.3 Los Alamos County Fire Department

The LACFD provides fire protection and ambulance coverage for the residential communities of Los Alamos and White Rock and for LANL. In the case of an emergency within LANL, the LACFD coordinates fire suppression and Emergency Medical Services. The IC retains overall responsibility for the emergency response effort.

D.1.6 LANL Support ~~Groups~~

D.1.6.1 Health Physics Operations ~~Group~~

~~The~~ Rradiation protection ~~HSR-1 provides field~~ personnel ~~to~~ perform routine site evaluation and monitoring to determine radiological conditions in facilities. They ~~radiation protection~~

~~personnelHSR-1~~ also provide~~s~~ guidance on radiological decontamination. In addition, this group augments the assessment and monitoring functions of the HAZMAT Team.

D.1.6.2 Occupational Medicine Personnel ~~Group~~

LANL maintains its own medical facility operated by ~~the O~~occupational ~~M~~medicine personnel~~Group (HSR-2)~~. Occupational medicine personnel~~HSR-2~~ provide~~s~~ 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 exposures to hazardous or radioactive materials, ~~HSR-2~~occupational medicine personnel maintain~~s~~ records of the health status of employees and related occupational medicine activities.

Although ~~HSR-2~~occupational medicine is not routinely involved with on-scene emergency response, the group maintains a central medical facility with a fully equipped emergency room and decontamination facilities at TA-3, Building ~~409~~1411. The location of this and other emergency facilities are shown on Figure D-2 (LANL, 2002a). Medical staff at these facilities includes physicians, physician's assistants, nurses, technicians, and counselors. All full-time physicians and nurses receive radiation accident training. ~~HSR-2~~Occupational medicine personnel also maintain~~s~~ access to a database that provides the clinical staff with timely toxic exposure and treatment information.

D.1.6.3 Industrial Hygiene and Safety Personnel~~Group~~

Industrial hygiene and safety personnel~~HSR-5~~ assist~~s~~ occupational medicine personnel~~HSR-2~~ with their~~its~~ ability to obtain additional exposure and treatment information. In addition, they~~industrial hygiene personnel~~~~HSR-5~~ maintain~~s~~ computer access to the National Institute of Occupational Safety and Health Technical Information Center and the Registry of Toxic Effects of Chemical Substances. During routine operations, ~~HSR-5~~these personnel perform~~s~~ site evaluations and field testing to determine the nature and extent of chemical contamination and specify~~ies~~ protective clothing and equipment.

D.1.6.4 Contract Assurance Office~~Occurrence Reporting Group~~

The ~~PS Division hosts the Occurrence Reporting Group~~Contract Assurance Office~~, whose personnel~~ assists the facility manager in investigating all adverse environmental, safety, health, and operational occurrences (on-site and off-site), determining the causal factors, identifying the

appropriate corrective actions, and assisting in the preparation of reports documenting the occurrence to DOE. This group tracks corrective actions associated with such occurrences and maintains the information in an on-site database.

D.1.7 Outside Response Agencies

During an emergency, outside response agencies report directly to the IC. An Operations Section Chief, designated by the IC, may aid in coordinating and directing the groups responding to an emergency.

D.1.7.1 Los Alamos County Police Department

The LACPD may assume IC under unique circumstances, but usually has only minimal interaction with LANL in an on-site emergency. This interaction normally involves traffic control on DOE roads with public access, handling criminal activity, and criminal investigations.

D.1.7.2 Los Alamos County Emergency Management Coordinator

Los Alamos County has an agreement with LANL's EM&R ~~personnelOffice~~ to provide assistance in certain emergency situations. If an emergency occurs on LANL property that may affect the communities of Los Alamos and White Rock, ~~the~~ EM&R personnel~~Office~~ will notify the Los Alamos County Emergency Management Coordinator, who will coordinate necessary emergency actions throughout the county.

D.1.7.3 Los Alamos Medical Center

LANL maintains a fully equipped decontamination room adjacent to the emergency room at LAMC. In the event that a case is sent to LAMC, support for the emergency room staff is provided by ~~HSR-2~~LANL occupational medical personnel. Radiation protection~~HSR-1~~, industrial hygiene~~HSR-5~~, and HAZMAT~~S-10~~ personnel also provide assistance to the emergency room staff; assistance from additional LANL resources is provided, as necessary. Assistance is coordinated through ~~the~~ EM&R personnel~~Office~~.

D.2 EMERGENCY EQUIPMENT AND COMMUNICATIONS [20.4.1 NMAC § 264.52(E)]

D.2.1 Emergency Equipment

20.4.1 NMAC, Subpart V, Part 264, Subpart D [6-14-00], requires a listing of all emergency response equipment available that can be used in the event of an emergency. Table D-2 lists emergency equipment available for use at any of LANL's hazardous or mixed waste

management units. The list includes emergency equipment available in the HAZMAT vehicles and trailers as well as supplemental emergency equipment maintained by the LACFD, KSL, and occupational medicine personnel~~HSR-2~~. A list of emergency equipment available for use at specific hazardous and/or mixed waste management units is presented ~~in Attachment E of TA-specific permit applications, permit modification requests, or permit renewal applications~~in Tables TA-3, D-1; TA-16, D-1; TA-50, D-1; TA-54, Area L, D-1; TA-54, Area G, D-2; TA-54 West, D-3, TA-55 Vault, D-1; TA-55 Building 4 Basement, D-2; TA-55 Container Storage Pad, D-3, and TA-55 Building 185, D-4 . Emergency equipment listed in ~~Table D-2~~these tables may be replaced and/or upgraded with functionally equivalent components and equipment, as necessary, for routine maintenance and repair.

D.2.2 Emergency Communications [20.4.1 NMAC § 264.56(a)]

Effective emergency response at LANL requires an efficient communication system that will integrate required personnel into the emergency response. The initial phase of an emergency may involve a small number of individuals at the affected area, require notification of the Duty Emergency Manager, and utilize local communication equipment and/or systems. When responding to hazardous and/or mixed waste emergencies, ~~the~~ EM&R personnel~~Office~~ can provide communications between response units and emergency organizations.

D.2.2.1 Central Alarm Station

The LANL CAS is manned by ~~PTLA or~~ security personnel 24 hours a day and is equipped with telephones (including direct-line telephones), medium- and short-range radios, 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 manual fire alarm equipment. The CAS receives alarms from several sources and, in turn, notifies the Duty Emergency Manager of a hazardous or mixed waste emergency. Sources include:

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

Upon receipt of an alarm, the CAS operator notifies the LACFD and the Duty Emergency Manager. The Emergency Manager, the EOC communicator, and/or the CAS

operator may request emergency response groups to respond. Should the LANL 911 system fail, the Los Alamos County System, located at the LACPD Station, will be used to activate emergency response groups.

D.2.2.2 Power Dispatch

The Power Dispatch is maintained 24 hours a day. Alarms at this facility are connected to LANL experiments, equipment, and/or buildings to record outages and hazardous conditions. Any conditions that activate these alarms will be reported immediately to the building management or to the CAS operator for notification and response.

D.2.2.3 Additional Communication Systems

Internal communication systems at LANL include:

- The Centrex telephone system
- A telephone paging system
- A variety of frequency modulated very high frequency simplex repeater systems, including:
  - Multiple base stations
  - Mobile and hand-held units
  - Links to New Mexico public safety agencies
- An ultrahigh frequency radio system, including:
  - Multiple antenna sites
  - Mobile and base units
  - Links with the LACPD, the LACFD, and the State Medical System
- A 400-megahertz trunked radio system that includes a link with the LACFD
- Transmission and reception (through the EOC) for:
  - Secure telephone
  - Secure fax
  - Secure still video
  - Secure videoconference system (to all DOE EOCs and DOE Headquarters)
- Access to all radio systems outlined above (through the EOC).

Off-site communications with federal, state, tribal, county, and other agencies are available through the following:

- A Centrex telephone system
- Private telephone lines (if Centrex fails)

- Two NAWAS stations
- A link to KRSN radio (local radio station)
- The local cable television
- The Community Alert Network.

The LANL EOC, maintained by ~~the~~ EM&R personnel~~Office~~, operates radio systems on key LANL and off-site channels. Emergency personnel responding to on-site incidents have the benefit of wide-area radio coverage using EOC facilities. The Duty Emergency Manager is responsible for activating whatever support personnel, equipment, or services are needed 24 hours a day.

D.3 CONTINGENCY PLAN IMPLEMENTATION [20.4.1 NMAC § 264.56]

The following sections discuss guidelines used to implement this plan, emergency notification, emergency manager actions, and actions to be taken in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents into the environment at LANL.

D.3.1 Guidelines for Implementation [20.4.1 NMAC §§ 264.51(b) and 264.56]

The decision to implement this plan depends upon whether an emergency exists, which for the purposes of this section is defined as an imminent or actual incident arising from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents that could threaten human health or the environment. The Duty Emergency Manager or IC will use the guidelines listed below to decide whether to implement this plan. All adverse environmental, safety, health, and operational occurrences (on-site and off-site) will be investigated to determine to causal factors and identify the appropriate corrective actions.

This plan will be implemented immediately in the following situations involving releases or potential releases of hazardous or mixed waste:

- Spills:
  - If a hazardous or mixed waste spill cannot be contained with secondary containment or application of sorbents
  - If a hazardous or mixed waste spill causes the release of flammable material, creating a fire or explosion hazard
  - If a hazardous or mixed waste spill results in toxic fumes that threaten human health

- Explosions:
  - If an unplanned explosion involving hazardous or mixed waste occurs
  - If an imminent danger of an explosion involving hazardous or mixed waste exists.
- Fires:
  - If a fire involving hazardous or mixed waste occurs
  - If any building, grass, forest, or nonhazardous waste fire exists that threatens to volatilize or ignite hazardous or mixed waste.
- Other Acts of Force Majeure (i.e., acts of God)
  - If an earthquake or other natural disaster threatens containment integrity, including precipitation that threatens to move spilled material off site.

D.3.2 Emergency Notification [20.4.1 NMAC § 264.56(a) and (b)]

Emergency notification requires immediate notification of 911 or ~~the~~ EM&R ~~Office~~personnel upon discovery of an imminent or actual incident involving hazardous and/or mixed waste. During nonworking hours, personnel will report all imminent or actual incidents involving hazardous and/or mixed waste to the Emergency Manager or the CAS operator at 667-6211. In the case of fire, notification of these individuals is superseded by the LANL fire alarm system. A fire is reported by dialing 911 (from telephone exchanges 667 and 665) or 667-7080 (from all exchanges, including cellular phones), activating automatic alarms, or activating a fire alarm pull box. All fire alarms alert the CAS operator, the LACFD, and ~~PTLA~~security personnel, who in turn notify the Duty Emergency Manager.

Upon recognition of a hazardous or mixed waste emergency, the first arriving emergency-trained person will become the Facility Command Leader. Once ~~the~~ EM&R ~~Office~~personnel ~~is~~ are notified of the emergency, the Duty Emergency Manager will proceed to the scene and be briefed by the Facility Command Leader, building/area personnel, and/or other emergency units/teams. The Emergency Manager will then assume the position of IC. If necessary, the IC may recommend that the EOC be activated and that the necessary members of the emergency management team be determined. The IC will form an ICS and contact the ~~HMGS~~HAZMAT Supervisor. The ~~HMGS~~HAZMAT Supervisor will notify the appropriate emergency response groups. The IC may determine from the list of response groups described in Table D-1 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.

~~The~~ EM&R ~~Office~~personnel will be notified of any potential hazardous or mixed waste emergency. The IC and the ~~HMGS~~ HAZMAT Supervisor will use whatever means are available

(including the assistance of other response groups, computer data searches, and sampling) to determine if a hazardous or mixed waste emergency exists.

D.3.3 Emergency Manager Actions [20.4.1 NMAC § 264.56(b-h)]

Upon notification of an emergency incident, the Duty Emergency Manager may:

- Make an initial assessment of the incident and, in conjunction with the IC, obtain resources to determine the source, quantities, and types of hazardous and/or mixed waste involved and the areal extent of any released materials.
- Request resources needed and have EOC staff begin notifications.
- Proceed directly to the scene.
- Assess the nature of the incident (e.g., through communication with the IC).
- Assume incident command after a direct briefing with the Facility Command Leader.
- Based on the guidelines in Section D.3.1 of this plan, determine if implementation of this plan is warranted.
- Activate the EOC, if necessary.

Upon deciding to implement this plan, the IC will, when appropriate:

- 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 IC will use the guidelines in Section D.3.1 to assess the hazards to human health and the environment. If any of the criteria under Section D.3.1 are met and if the responsible Group Leader (or his/her designee) has not already accomplished evacuation of the area, the IC will initiate shelter in place or evacuation of the immediate area.
- Direct the EOC staff to initiate protective actions and immediately notify appropriate response groups and personnel as per the EM&R Guidelines. The IC may activate one or more of the following community alert mechanisms: the Community Alert (telephone) Network, the KRSN radio remote input system, or the cable television capture system, sitewide area network radios, and public radio and television channels.
- In the case of fire or release of any type, make reasonable efforts to confirm that all response personnel at the scene are aware of actual or imminent special hazards associated with hazardous or mixed waste.
- In emergency situations, contact the appropriate ~~RRES~~ENV representative to notify the New Mexico Environment Department (NMED) at (505) 827-9329 and the National Response Center at (800) 424-8802, reporting:
  - The name and telephone number of the ~~RRES~~ENV representative
  - The name and address of the facility
  - The time and type of incident

- The name and quantity of material involved, to the extent known
- The extent of injuries, if any
- The possible hazards to human health or the environment outside the facility.

- When an emergency occurs at hazardous or mixed waste treatment units, ensure that appropriate LANL personnel monitor for leaks, pressure buildup, gas generation, or equipment ruptures.

Once control of the emergency is established, the IC will take all reasonable measures to minimize the occurrence, recurrence, or spread of fires, explosions, or releases. In addition, the IC will delegate cleanup and decontamination responsibilities to the Recovery Manager. These responsibilities may include:

- Arranging for site cleanup.
- Assisting with arrangements for proper handling of recovered waste, contaminated soil, or contaminated surface/groundwater.
- Assisting with arrangements for decontamination of equipment, as needed.
- Arranging for replacement and/or repair of equipment, as needed.
- Requesting that testing is conducted to verify successful cleanup.

Within 15 days of the incident, DOE National Nuclear Security Administration (NNSA) Los Alamos Site Office (LASO) will submit a report to the Secretary of the NMED. The contents of this report are generated by several LANL groups responding to the emergency, as detailed in Section D.11.

D.4 SPILLS [20.4.1 NMAC § 264.56(E)]

Sudden releases may include spills of hazardous or mixed waste that pose a significant threat to human health or the environment. Spill incidents resulting in a sudden release of hazardous or mixed waste that present a potential threat to human health or the environment, as listed in Section D.3.1, require implementation of this plan.

Hazardous and mixed wastes are stored on site at LANL in a variety of containers. Volumes of hazardous or mixed waste managed will vary from unit to unit. The general steps in handling hazardous and/or mixed waste spills are as follows:

- Isolate the immediate area and deny entry to all unauthorized personnel.
- Contain the spill by spreading sorbents or forming temporary dikes to prevent further migration (performed by properly trained personnel, if safe).
- Monitor the spill area and sample the spilled waste and contaminated media.

- Package the waste and contaminated media in sound containers.
- Decontaminate the area and all involved equipment and personnel (followed by testing to assure adequate cleanup).
- Remove the waste and contaminated media (performed by appropriate waste management personnel).

The IC will determine the steps to be taken for spill mitigation. If initial mitigation of the spill is necessary and can be accomplished safely (by appropriately trained personnel) before the Emergency Manager arrives, a qualified member of the affected area's operating group will serve as the Facility Command Leader.

Hazardous and/or mixed waste spills will be stabilized, if necessary, and cleaned up. During spill control and cleanup, all personnel will wear appropriate personal protective equipment (PPE). Monitoring will be conducted to ensure that chemical and, as appropriate, radiological exposure is minimized. The collected material may be treated as hazardous or mixed waste, depending on the components present. Runoff from spills of listed hazardous or mixed waste that have migrated outside hazardous waste management areas must be contained and managed as hazardous or mixed waste, as appropriate. If the spill was from a characteristic hazardous or mixed waste and if it is determined that the runoff does not exhibit the characteristic (i.e., ignitability, corrosivity, reactivity, and/or toxicity), the runoff need not be managed as characteristic waste. Temporary dikes may be constructed to contain runoff.

D.4.1 Spill Control Procedures

When a flammable organic solvent spill, a highly acidic spill, or a highly caustic spill has been stabilized with the contents of an organic solvent spill kit, an acid spill kit, or a caustic spill kit, respectively, the resulting material may be sorbed using a nonbiodegradable sorbent. Nonbiodegradable sorbent can be used to control any spill if it is known to be compatible with the spilled material. Appropriate containers or packaging will be used to collect all spilled material and contaminated sorbent. Tables TA-3, D-1; TA-16, D-1; TA-50, D-1; TA-54, Area L, D-1; TA-54, Area G, D-2; TA-54 West, D-3, TA-55 Vault, D-1; TA-55 Building 4 Basement, D-2; TA-55 Container Storage Pad, D-3, and TA-55 Building 185, D-4 ~~The Tables D-1 in the Sections of this Attachment~~ list emergency equipment available for spill control at specific units. The ultimate disposition of any contaminated sorbent or waste material will be determined by appropriate waste management personnel, according to hazardous waste management regulatory requirements.

D.4.1.1 Tank System Spill Control and Reporting

A tank system will be removed from service immediately using approved shutdown procedures if a leak or spill occurs from the tank system or its secondary containment system or if the system is determined to be unfit for use. Further addition of waste to the tank system or containment system will cease and the system will be visually inspected to determine the cause of the leak or spill. If a leak occurs from a tank system, as much of the waste as is necessary to prevent further release of waste will be removed within 24 hours after detection or as early as practicable, and the system will be inspected and repaired. All released waste will be removed within 24 hours or as soon as possible if a leak occurs to a tank's containment system.

If a spill from a tank is not immediately contained and cleaned up and exceeds a quantity of 1 pound, the release will be reported to the NMED within 24 hours of its detection in accordance with the requirements of 20.4.1 NMAC § 264.196(d)(1) [6-14-00]. In addition, a written report will be submitted to the NMED within 30 days describing the likely migration route of the release; soil characteristics at the site; monitoring and sampling data relevant to the release; proximity to downgradient drinking water, surface water, and populated areas; and response actions taken or planned.

D.4.1.2 Tank System/Secondary Containment Repair and Closure

If the integrity of a tank system, including its secondary containment, has not been damaged by a spill, the system may be returned to service. Service may not resume until after all released waste is removed and repairs, if necessary, are made. Any tank system that cannot satisfy the criteria described above will undergo closure in accordance with the requirements of 20.4.1 NMAC § 264.197 [6-14-00].

D.4.1.3 Certification of Major Repairs

If a tank system undergoes extensive repairs (e.g., installation of an internal liner, tank system piping retrofit), the tank system will not be returned to service until a certification by an independent, qualified registered professional engineer is obtained, verifying that the repaired system is capable of handling wastes without release for the intended life of the system. This certification will be submitted to NMED within seven days after returning the tank system to use.

D.4.2 Decontamination Verification

Decontamination will be accomplished at the spill site. After the spilled material has been sorbed, the material will be containerized. If the spill occurs on a concrete or asphaltic-concrete area, water or an appropriate solvent will be used to clean the area. Liquids (i.e., spilled material and cleaning water or solvents used to clean a spill) may be sorbed with a compatible, nonbiodegradable sorbent and containerized. If a spill is from an identifiable source, the spilled material may be characterized as a newly-generated waste using acceptable knowledge or may be analyzed, as applicable, for the hazardous waste constituents known to be components of the waste managed at that unit. Analytical method(s) given in Table D-3 will be utilized, as appropriate. If the spill is from other than an identifiable source, the spilled material will be analyzed for the appropriate parameters listed in Table D-3. All personnel conducting decontamination verification will wear appropriate PPE. ~~HSR-1~~Radiation protection personnel will conduct health physics monitoring whenever mixed waste is involved to ensure that radiation exposure is maintained as low as reasonably achievable. Any hazardous or mixed waste collected from decontamination activities will be handled appropriately.

In order to establish baseline data, a sample of decontamination water or solvent (and nonbiodegradable sorbent material, as applicable) will be taken prior to the start of the decontamination effort. A sample of the final washwater (or the used sorbent) will then be taken. The baseline samples and final washwater/used sorbent samples will be analyzed for the applicable parameters given in Table D-3. If the decontamination samples contain hazardous constituents that are not present in the baseline samples and the levels exceed established health-based levels, the decontamination procedure may be repeated. An alternative demonstration of decontamination may be proposed and justified to NMED, who will evaluate the proposed alternative in accordance with the standards and guidance currently in effect. If the proposed alternative is accepted, decontamination levels will meet the levels approved by NMED. Each sample will be collected with an appropriate sampling device (e.g., a thief or trier) as specified in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (EPA, 1986), and approved updates, as applicable.

If a hazardous/mixed waste spill occurs on soil, any free liquid present will be collected and containerized. Liquids may be sorbed with a compatible nonbiodegradable sorbent prior to containerization. For such a spill, contaminated soil will either be excavated and containerized or remediated in situ. Industrial health and safety personnel~~HSR-5~~ will conduct industrial

hygiene monitoring and, if mixed waste is involved, radiation protection personnel~~HSR-1~~ will conduct health physics monitoring, if deemed necessary, to minimize exposure during soil removal or remediation operations. To establish comparative background data, one or more samples will be collected from an unaffected area near the spill site. The spill site will then be characterized, and the data will be compared to the background data to ensure that contaminated material from the spill has been removed or remediated.

If a hazardous/mixed waste spill occurs in an area with flooring, the floor will either be removed in lieu of decontamination, or the floor will be decontaminated. If the decision is made to decontaminate the floor, swipe samples or other types of sampling appropriate for the contaminant will be collected at random and characterized for decontamination verification. If, after several decontamination efforts, it is subsequently determined that the affected floor area cannot be decontaminated, the floor material will be removed. In all cases, wastes generated during the decontamination and/or removal process will be managed appropriately.

D.5 EXPLOSION

Explosions and resultant releases may result in a significant threat to human health or the environment. The potential exists for hazardous or mixed waste to be released during an explosion. Implementation of this plan is required whenever a sudden release that cannot be contained or that presents a threat to human health or the environment occurs as a result of an explosion.

In the event of an explosion at LANL, all personnel will immediately evacuate the area. Any injured personnel will be decontaminated at the site, if required and if time allows. An LACFD ambulance will transport these personnel to LAMC for treatment. If an injury is severe and requires immediate medical evacuation, the injured person will be wrapped to contain contamination, if necessary. In the case of an actual or potential explosion, on-site personnel will contact ~~the~~ EM&R ~~Office~~personnel immediately so that the Emergency Manager can ensure that all necessary emergency response personnel are alerted. The LACFD is notified automatically upon central alarm system activation. The Emergency Manager assumes incident command and will remain near but at a safe distance from the site in order to inform personnel responding to the explosion of the known hazards.

If a fire results from an explosion, the LACFD Senior Officer will, upon arrival at the scene, evaluate all available information and determine the appropriate firefighting methods and tactics. The LACFD Senior Officer will direct firefighting operations as the acting IC until EM&R formally assumes command.

D.6 FIRE

Fires and resultant releases of hazardous or mixed waste may result in a significant threat to human health or the environment. Implementation of this plan is required whenever a fire incident results in a sudden release of hazardous or mixed waste that cannot be contained or that presents a threat to human health or the environment.

Fire alarms will be sounded automatically or manually to alert personnel that a fire hazard exists and to evacuate the area immediately if in the vicinity. Information related to the various fire alarms at the specific units is included in Tables TA-3, D-1; TA-16, D-1; TA-50, D-1; TA-54, Area L, D-1; TA-54, Area G, D-2; TA-54 West, D-3, TA-55 Vault, D-1; TA-55 Building 4 Basement, D-2; TA-55 Container Storage Pad, D-3, and TA-55 Building 185, D-4~~this Attachment's tables~~.

Depending on the size of the fire and the fuel source, portable fire extinguishers may be used. However, LANL policy does not encourage the use of portable fire extinguishers by employees unless they are properly trained. Instead, LANL policy encourages immediate evacuation of the area and notification of the CAS operator by dialing 911. For any fire, including a fire that involves hazardous or mixed waste, the responsible Group Leader and ~~the~~ EM&R ~~Office~~personnel must be contacted immediately. The Emergency Manager will alert the LACFD and all other necessary emergency response personnel. If the fire spreads or increases in intensity, all personnel must follow protective actions as designated by the Emergency Manager. The Emergency Manager assumes incident command and will remain near the scene to advise personnel responding to the fire of the known hazards.

Upon arrival at the scene, the LACFD Senior Officer will evaluate all available information and determine the appropriate firefighting methods and tactics. The LACFD Senior Officer will direct firefighting operations as the acting IC until EM&R formally assumes command.

D.7 UNPLANNED NONSUDDEN RELEASES

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

D.7.1 Responsibility

Appropriate LANL personnel are responsible for correction of a nonsudden release from a hazardous or mixed waste unit if the correction can be performed safely with normal maintenance and management procedures. Personnel from ~~the~~ EM&R ~~Office~~ may provide assistance in mitigating releases. Any correction methods for nonsudden releases that have resulted in an impact to the environment will be coordinated with the NMED.

D.7.2 Nonsudden Releases

In general, the response to a nonsudden release will be to contain the release, to correct the cause of the release, and to clean up any release to a level that protects human health and the environment.

Appropriate LANL personnel will conduct regularly scheduled inspections to detect failure of containment at the unit(s) addressed in this Permit. Secondary containment systems will be inspected regularly to ensure that the integrity of the containment systems has not deteriorated. If an inspection reveals that containers are leaking or that secondary containment has deteriorated, LANL personnel will ensure that maintenance or replacement of containment is performed, as appropriate. Inspections will be conducted in accordance with the facility's inspection plan.

D.7.3 Nonsudden Release Surveillance

In addition to routine inspection and site-specific sampling and testing, LANL has established an area-wide environmental monitoring network maintained by ~~RRES~~ENV. Monitoring and sampling locations for various types of measurements are organized into three main groups. Regional monitoring stations located within the five counties surrounding Los Alamos County are placed up to 80 kilometers (50 miles) from LANL. These stations serve to determine background conditions. Perimeter stations, located within approximately 4 kilometers (2.5 miles) of the LANL boundary, document conditions in residential areas surrounding LANL. On-

site stations, most of which are accessible only to employees during normal working hours, are within the LANL boundary.

Routine surveillance conducted at these stations includes measuring radiation and collecting samples of air particulates, surface waters, groundwater, soil, sediment, and foodstuffs for subsequent analysis. Additional samples provide information about particular events, such as major runoff events and nonroutine releases. Data from these efforts are used for comparison with standards, for determining background levels, and for radiation dose calculations.

D.8 EXPOSURE TO HAZARDOUS OR MIXED WASTE

If a person is exposed to hazardous or mixed waste, the affected person, a co-worker, or line management will notify ~~the~~ EM&R ~~Office~~personnel. Appropriate first aid should be administered immediately. An EM&R ~~Office~~ representative will make appropriate notifications as soon as possible so that exposure levels and decontamination requirements can be established. The affected person will then be transported to the ~~HSR-2~~occupational medical facility or to LAMC for evaluation. If possible, the material involved in the exposure will be ascertained, and the information will be given to the medical staff.

Other potential exposures will necessitate evacuation of the area, if appropriate, or under any of the following conditions:

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

The affected person will be transferred to the ~~HSR-2~~occupational medical facility or to LAMC. An ~~HSR-1~~industrial health and safety, ~~HSR-5~~radiation protection, or ~~S-10~~HAZMAT representative will attempt to ascertain what, if any, exposure occurred and what corrective measure is appropriate.

D.9 EVACUATION [20.4.1 NMAC § 264.52(F)]

A facility will be evacuated upon the voice command to evacuate the area or upon the sounding of the evacuation or fire alarm. The IC may call for sheltering in place when evacuation is impractical due to significant airborne hazards. Shelter in place may be possible in a designated area or in a building where all exterior windows and doors may be closed and

outdoor air ventilation equipment turned off. Once the airborne hazard has decreased, personnel would then be evacuated.

D.9.1 Emergency Process Shutdown Prior To Evacuation

Personnel are instructed to shut down equipment prior to evacuating a building/area unless an immediate building/area evacuation is announced or signaled. To ensure efficient shutdown, training and exercises addressing the shutdown process 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 proper equipment and PPE. If they are on location, ~~HSR-1~~radiation protection, ~~HSR-5~~industrial health and safety, and/or ~~S-10~~HAZMAT personnel will provide advice and assistance. Process-shutdown procedures apply mainly to hazardous or mixed waste treatment units and are addressed, as appropriate, in Attachment E of TA-specific permit applications, permit modification requests, or permit renewal applications.

D.9.2 Evacuation Plan

Emergency situations may warrant the shutdown and evacuation of areas or buildings in order to protect personnel and property, to anticipate the emergency condition, or to enhance the appropriate response. Table D-4 lists the criteria for evacuation, persons responsible for initiating evacuations, and reentry conditions. Figures in Attachment E of TA-specific permit applications, permit modification requests, or permit renewal applications show evacuation routes and assembly/muster areas for specific hazardous and/or mixed waste management units.

To initiate the evacuation of a building/area, the evacuation or fire alarm is sounded and/or the public address (PA) system may be used. Evacuation alarms cannot be silenced and reset by site personnel. Only the Fire Alarm Maintenance Section and the LACFD Battalion Chief can silence and reset alarms. To evacuate a portion of a building or area, use of the PA system may be more appropriate. The PA system will notify the occupants of the area to be evacuated and will advise personnel throughout the building of the existence of a problem in a specific area. Once evacuation has been initiated and if conditions allow, personnel will turn off all equipment that could contribute to the hazard if left unattended. All personnel will then proceed from the affected area to the assembly/muster area.

In the event of evacuation of a building, an outbuilding, or an outlying work area, the responsible Group Leader (or his/her designee) will determine a control point at the closest safe location (e.g., considering wind direction). The designated area will be outside the affected area and will serve as an assembly/muster area where the Group Leader (or designee) can oversee evacuation operations and work to prevent further spread of the hazard.

As personnel exit an affected building/area, a primary sweep of the building/area will be performed to ensure that all personnel have evacuated. If the building/area is evacuated, a Group Leader designee will take attendance at the assembly/muster area and report personnel accountability to the IC. The evacuation procedure is as follows:

- The person discovering the accident or emergency will call 911 to ensure that line management and ~~the~~ EM&R ~~Office~~personnel are notified.
- Site-specific BEPs and/or emergency action procedures will be followed concerning evacuation, sweep, personnel accountability, and equipment shutdown procedures.

A responsible on-site person may direct the initial evacuation and the central alarm system may be activated. ~~The~~ EM&R ~~Office~~personnel will be notified immediately and will dispatch the Duty Emergency Manager. A responsible on-site person may implement the evacuation process until the Duty Emergency Manager arrives at the scene to assume that responsibility.

D.10 SALVAGE AND CLEANUP [20.4.1 NMAC § 264.56(G) AND (H)]

Appropriate representatives from the ~~RRES~~ENV groups will survey the affected area before salvage and cleanup begin. They will conduct visual inspections and sampling, as appropriate, of the affected area to determine whether cleanup is complete. If gases or fumes, electrical or radiological problems, or other conditions present a hazardous situation, personnel or selected teams equipped with proper PPE will reenter the area to perform designated decontamination tasks, repairs, and salvage to allow the return to normal operations. After an emergency, the IC will turn the operation over to a designated Recovery Manager, who will:

- Provide for proper handling of recovered waste, contaminated soil or surface water, or any other material that results from a spill, fire, or explosion. Contaminated material will be managed appropriately and temporarily stored at one of the hazardous or mixed waste storage areas at LANL. Waste management personnel will be responsible for determining the final disposition of the waste. This determination will be made in compliance with hazardous waste management regulations.

- Arrange to monitor for damage or improper operation of the unit and associated equipment as a result of the emergency or of plant shutdown in response to the emergency.
- 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 inspected visually and then sampled, if necessary, to determine the type and degree of contamination and to determine appropriate cleanup measures.

Prior to resuming operations, the appropriate facility management at LANL will verify that the previously mentioned tasks have been performed. The owner/operator (DOE NNSA/LASO) will notify appropriate state and local authorities that cleanup procedures are completed and that emergency equipment is clean and fit for its intended use.

The IC assumes the coordination of post-emergency actions (particularly during the time period immediately following the emergency) until a Recovery Manager is appointed. The Recovery Manager then assumes this coordination role. The Recovery Manager is the functional equivalent of the Emergency Coordinator for post-emergency actions. The post-emergency actions include cleanup operations, vital equipment repair, or interim hazard-removal operations (such as arranging for demolition of unstable walls). The services of affected operational organizations, ~~RRES~~ENV groups, KSL, and other on-site resources will also be used to estimate cleanup costs and operational impact.

D.11 EMERGENCY RESPONSE RECORDS AND REPORTS [20.4.1 NMAC § 264.56(J)]

Any emergency that requires implementation of this plan will be documented by the Group Leader (or his/her designee) responsible for the hazardous or mixed waste unit associated with the emergency, and reported ~~orally within 24 hours and~~ in writing within 15 days of the incident to the NMED. The incident report, submitted by DOE NNSA/LASO, will 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(s) involved
- Quantity of material(s) involved

- Extent of injuries (if any)
- Assessment of actual or potential hazards to human health or the environment
- Estimated quantity and disposition of material recovered from the incident.

In addition, LANL personnel responding to any emergency requiring implementation of this plan will record the date, time, location, and details of the incident. This information will be maintained in the facility operating record.

D.12 CONTINGENCY PLAN AMENDMENT [20.4.1 NMAC § 264.54]

This plan will be reviewed periodically by appropriate division personnel. The plan will be amended immediately if determined to be inadequate to handle releases (spills, explosions, and/or fires) and whenever:

- The facility permit is revised.
- There is change in the design or operation of the facility (e.g., quantities of waste handled and handling techniques) that increases the likelihood of an emergency and requires changes in emergency response.
- The Primary Emergency Manager changes.

The list of emergency equipment changes significantly.

D.13 REFERENCES

EPA, 1986 and all approved updates, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," *EPA-SW-846*, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, U.S. Government Printing Office, Washington, D.C.

LANL, 2002, "Los Alamos National Laboratory Emergency Management Plan," LIR 403-00-01.0, Los Alamos National Laboratory, Emergency Management and Response Office, Los Alamos, New Mexico.

LANL, 2002a, “Los Alamos National Laboratory General Part B Permit Renewal Application”, Revision 2.0, August 2002, LA-UR-03-5923, Los Alamos National Laboratory, Los Alamos, New Mexico.

Table D-1
Response Groups and Agencies Available to the Emergency Management and Response Office for Guidance and/or Emergency Assistance

LANL[a]-Controlled Response Group	Telephone	Responsibilities
~~HSR-1,~~ Health Physics ~~Operations~~Personnel	667-7797~~7171~~	Provides routine guidance on radiological decontamination. Provides routine site evaluation and monitoring to determine the nature and extent of contamination (radiological).
~~HSR-2,~~ Occupational Medicine	667-0660	Provides emergency medical treatment.
~~HSR-5,~~ Industrial Hygiene and Safety Personnel	606-0295 667-5231	Provides guidance on industrial hygiene equipment and operational safety. Provides routine site evaluation/support field testing to determine the nature and extent of contamination (chemical).
Contractor Assurance Office~~PS-7, Occurrence Reporting~~	6658206~~7-0598~~	Reports occurrences and tracks follow-up actions.
~~S-10,~~ Hazardous Materials Response (HAZMAT)	665-5237	Provides emergency site evaluation/field monitoring (chemical and radiological). Specifies protective clothing and equipment. Dispatches Hazardous Materials Response Team. Provides support for chemical, radiological, hazardous, and mixed waste incidents and decontamination of responders and response equipment.
~~RRES-MAQ,~~ Meteorology & Air Quality Personnel	667-6952~~5-8855~~	Provides information on meteorological conditions.
~~RRES-WQH,~~ Water Quality and Hydrology Personnel	667-0666 or 665-~~1859~~0453	Provides information on hydrologic conditions.
~~RRES-SWRC, Solid Waste Regulatory~~Hazardous Waste Compliance Personnel	66~~5-9527~~7-0666 or 665-0453	Provides guidance on regulatory requirements. Provide guidance on proper treatment, storage, and off-site shipment of hazardous and mixed waste. Conducts field surveys to determine spread of contamination and adequacy of cleanup.
~~RRES-ECO,~~ Ecology Personnel	667-6952~~5-8961~~	Provide~~s~~ information on biotic conditions.
Security Personnel~~PTLA, Protection Technology Los Alamos~~	667-4531	Provide~~s~~ traffic control and security.
KSL[b]	667-5702~~2-9080~~	Dispatches maintenance personnel and equipment. Assists in waste cleanup under the direction of the Recovery Manager.
~~NMT, Nuclear Materials Technology~~TA-55 Operations Division	667-3030~~2556~~	Provides initial emergency site evaluation at Technical Area (TA) 55 and conducts activities related to the prevention, notification, and control of emergencies at TA-55. In the event of an emergency at TA-55, monitors for leaks, pressure buildup, gas generation, or

LANL[a]-Controlled Response Group	Telephone	Responsibilities
		equipment ruptures, if necessary. Maintains and operates TA-55 Emergency Response Team. Writes TA-55 emergency plans and procedures.
~~DX,~~ Dynamic and Energetic Materials~~Experimentation~~ Division	667-5653	Provides information and/or assistance during emergencies at TA-14, TA-15, TA-36, and TA-39.
~~ESA, Engineering Sciences and~~High Explosives Area Access Control ~~Applications Division~~	667-6844~~4136~~	Provides information and/or assistance during emergencies involving units at TA-16.
Los Alamos County Fire Department	911 662-8301	Dispatches firefighting personnel and equipment and provides Emergency Medical Services.
Los Alamos County Police Department	662-8222	Provides traffic control on public access roads.
Los Alamos Medical Center[c]	662-4201	Provides medical services. Provides and maintains Emergency Room.

[a] Los Alamos National Laboratory.
[b] KBR-Shaw-LATA.
[c] Medical services related to hazardous and mixed waste injuries are provided under the direction of HSR-2.

Table D-2

Los Alamos National Laboratory-Wide Emergency Equipment

Hazardous Materials (HAZMAT) Vehicles and Associated Emergency Equipment

HAZMAT vehicles and trailers are located at Technical Area (TA) 64, Building 39 (TA-64-39). They are available to the Security and Safeguards (S) Hazardous Materials Response Group (S-10) for emergency response to all of the TAs at Los Alamos National Laboratory (LANL). S-10 is responsible for maintaining the supplies of appropriate emergency equipment in each vehicle and trailer.

The HAZMAT vehicles and trailers are equipped with safety and emergency equipment, personal protective clothing, and other supplies, which may include, but are not limited to, some or all of the following:

Assorted personal protective equipment, T-shirts, and gloves
Safety goggles, safety glasses, and face shields
Boots and booties
Totally encapsulating suits and boots
Level A and B suits
Flash suits
Self-contained breathing apparatus (SCBA) and SCBA bottles
Respirators and cartridges
Hazardous chemical reference books and other reference materials
Shovels
Siphon pumps
Assorted spill kits and sorbents
Neutralizing solutions: acids, bases, and caustics
Two-way radios, cellular phones, facsimile, and other communication equipment
Bottles of leak detector and leak repair kits
Emergency repair packs
HAZMAT bags
Gas detectors and chemical monitoring equipment
Radiological monitoring equipment
Sponges and cleaners
Warning signs and barricade tape
Traffic control barriers
Flashlights
Cameras and film
Knives
Portable power supplies
Warning and signal horns
Harnesses and belts

Decontamination equipment
Sampling equipment
Lifting equipment and vetter bags
Assorted tools, tape, and other supplies
Non-sparking tools
Biological detection equipment
Chemical vacuums
Sandia foam
Plugging and diking equipment
Sample van equipped with a glovebox and analysis equipment
Environmental continuous air monitoring equipment
Robot
National Atmospheric Release Advisory Center-Internet Client (NARAC Client)
Hotspot plume modeling program
Mass decontamination trailer with tent and supplies
Portable decontamination trailer
Portable structures
Tents
Trucks
Trailers
International Shipping Units
Portable hot water heater
Forklift
Automated external defibrillators.

Supplemental Emergency Equipment and Personnel Available From the Los Alamos County Fire Department (LACFD)

Supplemental emergency equipment available from the LACFD may include, but is not limited to, some or all of the following:

Fire engines
Mini-tankers with compressed air foam capability
Modular ambulances
Rescue vehicles
Crash-Fire-Rescue (CFR) unit
Water tankers with compressed air foam capability
Incident Command vehicles
SCBA units
SCBA air tanks
Remote air system for confined space rescue
Ladder truck with pump
Personnel with Hazardous Material First Response Operational Level training
Personnel with Basic Emergency Medical Technician training
Personnel with Advanced Life Support training

Supplemental Emergency Equipment and Personnel Available from KBR-Shaw-LATA (KSL)

Supplemental emergency equipment available from KSL may include, but is not limited to, some or all of the following:

TRANSPORTATION EQUIPMENT

Pickups, 1/2 through 3/4 ton
Trucks, 1 through 3 ton
Vans, panels, and carryalls
Buses

SPECIAL EQUIPMENT

Graders
Loaders
Snowplows and snow blowers
Bulldozers
Scrapers
Semitrailers
Chain saws
Street flushers
Mobile transceivers
Generators
Handsets (2-way)
Pageboys (1-way)
Welders
Mobile site logistics support equipment/associated heavy equipment
Fully equipped spill response unit
Utilities equipment and emergency utility support
Fuel trucks
Light banks
Dump trucks
Backhoes
Potable water trucks
Cranes
Forklifts

TRAINED PERSONNEL

Heavy equipment operators
Dispatchers
Mechanics
Power saw operators
Radio and telephone operators

Truck drivers
Rodent/Pest Control personnel
HAZMAT response/cleanup personnel
Welders
Electricians

Emergency Equipment and Personnel at the Occupational Medicine Clinic

Occupational Medicine Group (HSR-2)

At TA-3 (SM-~~409~~1411) Central Clinic

Emergency equipment and supplies available from HSR-2 may include, but are not limited to, some or all of the following:

PERSONNEL

Physicians
Physician's Assistants
Nurses
X-ray Technician
Clinical Laboratory Technicians
Clinical Testing Technicians
Clinical Psychologist
Counselors

SPECIAL EQUIPMENT-PORTABLE

Multichannel emergency receiver-base station
Two-way radio on the State Med Net, the LANL Emergency Management channel, and the LANL Health-Safety Net
Cardiac monitors and defibrillators
Crash cart emergency equipment with E-tank oxygen (O_2)
Portable physicians' bag with medications
Portable suction unit
Portable stretchers (ambulance, gurney, folding)
Wheelchairs
O_2 tanks
Manual resuscitators
Intravenous (IV) stands
IV solutions
Otoscopes/ophthalmoscopes
Portable sphygmomanometers
Stethoscopes
Anticontamination apparel
Eye irrigation solution
First-aid kits

Extrication and cervical collars, crutches, canes
Suture sets
Protective apparel
Morgan lens irrigation sets
Decontamination equipment (portabl

SUPPLIES-GENERAL

Bedding/pillows
Rescue blankets
Burn blankets
Thermal/icing pouches
Multitrauma dressings, surgical and first aid supplies
Disposable ice bags

SPECIAL FACILITIES - NONPORTABLE

Fully equipped decontamination room at the Occupational Medicine Clinic
Completely equipped emergency room with ambulance entrance
Emergency lighting system
Complete X-ray suite
Protective clothing and wound counters
12-lead electrocardiograph
Fully equipped crash cart with Life Pak defibrillator/external pacer, intubation equipment, emergency
medications
Fully equipped decontamination room at Los Alamos Medical Center (LAMC) adjacent to the
LAMC emergency room

TRANSPORTATION

Full ambulance service is available within minutes to the central facility.

COMMUNICATION

Base station on State Medical Net and Los Alamos County Fire Department trunked radio system.

Table D-3

Waste Analysis Parameters and Test Methods[a]

Parameter	Test Method	Reference[b]
Ignitability	Pensky-Martens closed-cup method	(L, S) SW1010, SW1020A
	Setaflash closed-cup method	(S) SW1030
	Ignitability of solids	(L, S) ASTM D93-02a
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) SW9040B
Toxicity characteristic (TC)	Toxicity characteristic leaching procedure (TCLP) extraction	(S) SW1311
TC Metals:	Graphite furnace atomic absorption (AA) spectroscopy, gaseous hydride AA, or direct aspiration AA, manual cold-vapor technique	
Arsenic		(L, S) SW7060A, SW7061A
Barium		(L, S) SW7080A, SW7081
Cadmium		(L, S) SW7130, SW7131A
Chromium		(L, S) SW7190, SW7191
Lead		(L, S) SW7420, SW7421
Selenium		(L, S) SW7740, SW7741A
Silver		(L, S) SW7760A, SW7761
Mercury	Manual cold-vapor technique	(L) SW7470A, (S) SW7471A
Volatile organics	Gas chromatography (GC)/mass spectrometry (MS)	(L, S) SW8260B
	GC/MS capillary column technique	
Semivolatile organics	GC/MS	(L, S) SW8270C[c]
	GC/MS capillary column technique	(S) SW8275A
Organochlorine Pesticides	Thermal extraction/GC/MS	(L, S) SW8081A
Chlorinated Herbicides	GC	(L, S) SW8151A
Cyanide, free and total	Distillation and colorimetric ultraviolet	(L, S) SW9010B, SW9012A
Total chromium	Colorimetric method for hexavalent chromium	(L, S) SW7196A
Sulfide	Colorimetric titration	(L, S) SW9030B

Table D-3 (Continued)

Parameter	Test Method	Reference[b]
Total RCRA metals[c,d]	Acid digestion	(L) SW3010A, (S) SW3050B
	Inductively coupled plasma atomic emission spectroscopy	(L, S) SW6010B
Arsenic		(L, S) SW6010B
Barium		(L, S) SW6010B
Cadmium		(L, S) SW6010B
Chromium		(L, S) SW6010B
Lead		(L, S) SW6010B
Selenium		(L, S) SW6010B
Silver		(L, S) SW6010B
Mercury	Manual cold-vapor technique	(L) SW7470A, (S) SW7471A
Free liquids	Paint Filter Liquids Test	(L, S) SW9095A

[a] At Los Alamos National Laboratory, current analytical capabilities include limited analyses of mixed waste samples. These analyses include gross alpha, beta, and gamma screening.

[b] "A" (e.g., A006) refers to U.S. Environmental Protection Agency, 1984, "Sampling and Analysis Methods for Hazardous Waste Combustion," *EPA-600/8-84-002*.
"ASTM" refers to American Society for Testing and Materials standards.
"SW" refers to U.S. Environmental Protection Agency, 1986 and all approved updates, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," *SW-846*.
(L) refers to liquid waste.
(S) refers to solid waste.

[c] See also atomic absorption methods. Total metals may be substituted for TCLP metals, if appropriate.

[d] RCRA = Resource Conservation and Recovery Act.

Table D-4

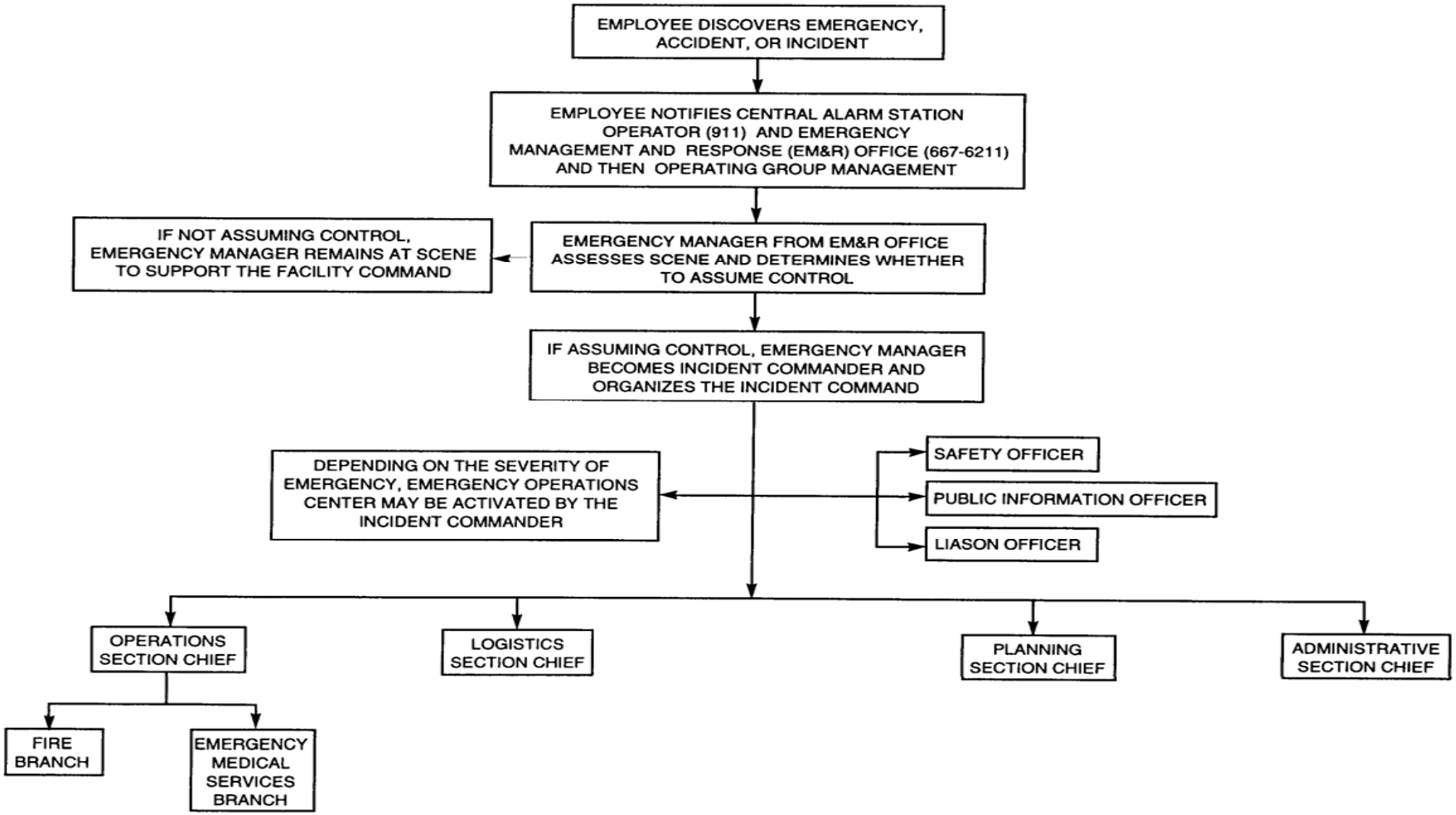
Evacuation Determination and Re-Entry Conditions

Reason for Evacuation	Evacuation Determination Made by	Reentry Conditions[a]
Fire	[1]Fire or evacuation alarm, Group Leader or alternate, Lead Engineer, Senior Staff Member present, Senior Technician, or Emergency Manager	Following survey by the person designated by the IC[b]
Explosion	Same as 1 above	Same as above
Loss of ventilation	[2]Group Leader or alternate, Senior Staff Member, Lead Engineer, or Senior Technician	Same as above
Loss of electric power	Same as 2 above	Same as above
Extensive contamination	Same as 2 above or health physics~~HSR-1~~[c] ~~R~~representative	Same as above
Airborne contamination	Same as 2 above or Radiation Monitor	Same as above
Escape or release of toxic or hazardous gas or fumes	Group Leader or alternate, Senior Staff Member, Lead Engineer, Senior Technician, or Emergency Manager	Same as above
Bomb or bomb threat	EM&R[~~d~~c] or security personnel~~PTLA~~[~~e~~] ~~representative~~, R&D[~~f~~d] Section Leader or alternate, Senior Staff Member, or Lead Engineer	Same as above

[a] All reentries are authorized by the EM&R Incident Commander.
[b] "IC" refers to the Incident Commander as defined in 29 CFR § 1910.120.
[c] ~~"HSR-1" refers to the Health Physics Operations Group.~~
[~~d~~] "EM&R" refers to the Emergency Management and Response Office.
[~~e~~] ~~"PTLA" refers to Protection Technology Los Alamos.~~
[~~f~~d] "R&D" refers to the Research and Development Section

Figure D-1

General Hazardous and Mixed Waste Emergency Notification Structure



TA-3

ATTACHMENT D

CONTINGENCY PLAN

TA-3
ATTACHMENT D
CONTINGENCY PLAN

In accordance with the New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20 NMAC 4.1), Subpart V, Part 264, Subpart D, "Contingency Plan and Emergency Procedures," and 20 NMAC 4.1, Subpart IX, 270.14(b)(7), revised January 1, 1997, contingency measures applicable to the hazardous and mixed waste container storage unit at Technical Area (TA) 3, Building 29 (TA-3-29), Chemistry and Metallurgy Research (CMR) Building are provided in this Attachment.

The CMR Building at Los Alamos National Laboratory (LANL) has a facility-specific Emergency Management Plan (EMP) to ensure that emergency planning and preparedness for the CMR Building are commensurate with the facility and the nature of work performed there and to provide sufficient subject matter experts at the facility, should an emergency occur.

The plan establishes the CMR Facility Emergency Response Organization, which is comprised of a facility Emergency Response Team (ERT), Facility Incident Command (FIC), and the CMR Operations Center. The CMR ERT is a 15 - 20 member group of volunteer facility personnel trained to provide initial response to emergencies. The FIC is comprised of division and line managers and key personnel who respond to pre-designated locations for the purpose of initial command and control of events that occur at CMR Building emergencies. The CMR Operations Center is the emergency communications focal point and has the responsibility of development and maintenance of alarm response instructions, notification lists, and call-out lists.

"The CMR Facility Emergency Management Plan Training for CMR Workers" (LANL, 1999), includes information on emergency equipment (see Table D-1 of this Attachment Section); evacuation routes (Figure E-1, LANL, 1998) and primary and secondary evacuation assembly areas (Figure E-2, LANL, 1998); and evacuation procedures for the FIC, persons wearing anti-C clothing, and persons in non-anti-C clothing. The CMR EMP also includes emergency categorization, lists of potential facility emergencies, their associated alarms, and the appropriate response to the emergency and/or the alarms. Figure E-3 (LANL, 1998) shows the locations of fire hydrants in the vicinity of TA-3-29. Evacuation routes, evacuation area locations, and emergency equipment are subject to change.

REFERENCES

LANL, 1999, “The CMR Facility Emergency Management Plan Training for CMR Workers,” Los Alamos National Laboratory, Los Alamos, New Mexico.

LANL, 1998, “Los Alamos National Laboratory General Part B Permit Application,” Revision 1.0, Los Alamos National Laboratory, Los Alamos, New Mexico.

Table D-1

TA-3

Emergency Equipment

FIRE CONTROL EQUIPMENT

Dry chemical fire extinguishers are available in Rooms 9010, 9020, and 9030.

Description of General Capabilities:
Each fire extinguisher has a 10-pound minimum capacity and may be used by any qualified employee in the event of a small fire.

Nine fire hydrants are located around the outside perimeter of Technical Area (TA) 3, Building 29 (TA-3-29). The nearest fire hydrants to Rooms 9010, 9020, and 9030 are located on the south side of Wing 9 and west of Wing 5.

Description of General Capabilities:
The fire hydrants supply water at an adequate volume and pressure to satisfy the requirements of the New Mexico Administrative Code, Title 20, Chapter 4, Part 1, Subpart V, 264.32, revised January 1, 1997.

Fire alarm pull boxes are located in Rooms 9010 and 9020.

Description of General Capabilities:
Manually-operated fire alarms may be activated by any employee in the event of fire to notify the Los Alamos County Fire Department (LACFD) and security personnel~~Protection Technology Los Alamos (PTLA)~~.

Sprinkler systems are located in Rooms 9010, 9020, and 9030.
Automatic thermal alarm systems are located in Rooms 9010, 9020, and 9030.
Description of General Capabilities:

The sprinkler systems and thermal alarm systems are heat activated. Security personnel~~PTLA~~ and the LACFD are alerted when a system has been activated.

SPILL CONTROL EQUIPMENT

Spill control kits are located in Rooms 9010, 9020, and 9030. Spill kits include (but are not limited to) sorbent pillows, and/or absorbent ~~safety glasses, and gloves~~.

Description of General Capabilities:
Sorbent is used in the event of a small spill.

COMMUNICATION EQUIPMENT

Telephones are located in the north enclosure of Room 9010, in Room 9020, and in Room 9030.

Paging phones and evacuation alarms are located in Rooms 9010, 9020, and 9030.

Description of General Capabilities:
Telephones are used for internal and external communication and have paging capabilities. The evacuation alarm is a pulsating sound that can be heard over the public address system. The fire alarm is a double slow-whoop sound.

DECONTAMINATION EQUIPMENT

Emergency shower and eyewash stations are located in the two enclosures in Rooms 9010, 9020, and in Room 9030.

Material safety data sheets (MSDS) are available hard copy or via online database~~in Room 9030~~.

Description of General Capabilities:
Emergency shower and eyewash stations are used by personnel who receive a chemical splash to the skin or eyes. Specific MSDSs for the chemicals should be obtained prior to working with hazardous or mixed waste to determine if the application of water is indicated for decontamination.

PERSONAL PROTECTIVE EQUIPMENT

Personnel at TA-3-29 are required to use appropriate personal protective equipment (PPE) to protect themselves from hazards found in the workplace under normal conditions. This PPE may include gloves, steel-toed shoes, and safety glasses. Additional PPE may be required during an unusual hazardous situation or during sampling activities.

Self-contained breathing apparatus are available in hallway outside of Room A130 (Administrative Wing).

Room 9102 is a change room with protective clothing available.

Full-mask negative pressure respirators are available as needed~~located in the hallway outside of Room 9104~~; radioactive particulate filters are available.

OTHER

See Table D-2 of this Contingency Plan~~E-2 in Appendix E of the "Los Alamos National Laboratory General Part B Permit Application," Revision 1.0 (LANL, 1998)~~ for equipment available in the Hazardous Materials Response Group vehicles and trailers.

TA-16

ATTACHMENT D

CONTINGENCY PLAN

TA-16
ATTACHMENT D
CONTINGENCY PLAN

In accordance with the New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20.4.1 NMAC), Subpart V, Part 264, Subpart D, and 20.4.1 NMAC § 270.14(b)(7), revised June 14, 2000, contingency measures applicable to the open burning (OB) units at the Technical Area (TA) 16 Burn Ground are provided in this Attachment's General Section. Specific information on emergency response resources and release prevention/mitigation at TA-16 is provided below.

Figure E-1 (LANL, 2003) shows the evacuation routes and muster area that may be used at the TA-16 OB units in the event of an emergency. In addition, a listing of emergency equipment currently available for use at the TA-16 Burn Ground is included as Table D-1 below. The evacuation routes, muster area location, and emergency equipment are subject to change as conditions or facility procedures warrant.

D.1 EMERGENCY RESPONSE RESOURCES

The High Explosives Engineering personnel~~Engineering Sciences and Applications (ESA) Division is~~ ~~-~~are responsible for the TA-16 OB units. Appropriate ~~ESA~~ personnel have been trained in emergency procedures.

D.2 RESPONSIBILITY

At TA-16, High Explosives Engineering personnel are~~ESA Division is~~ responsible for correction of a nonsudden release from the TA-16 OB units if the correction can be performed safely with normal maintenance and management procedures. Personnel from the Emergency Management and Response Office may provide assistance in mitigating releases. Any correction methods for nonsudden releases that have resulted in an impact to the environment will be coordinated with the New Mexico Environment Department.

D.3 REMEDIAL ACTION

Contingency or emergency measures are unanticipated "fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste . . ." for which a schedule of remedial actions cannot be reasonably ascertained. Any remedial actions carried out under the provisions of the Contingency Plan will be performed as soon as possible to ensure protection of human health and the environment, as described in ~~Appendix D~~Attachment D. These

remedial actions may include site cleanup; proper handling of recovered waste, contaminated soil, or contaminated surface water; decontaminating equipment, as needed; replacing or repairing equipment, as needed; and testing to verify successful cleanup.

High Explosives Engineering personnel~~ESA Division~~ ~~personnel~~ conduct regularly scheduled inspections at TA-16 to detect deterioration and/or failure of containment at the TA-16 OB units. If an inspection reveals deterioration or failure, personnel ensure that maintenance or replacement is performed, as appropriate.

D.4 REFERENCES

LANL, 2002, "Los Alamos National Laboratory General Part B Permit Renewal Application", Revision 2.0, August 2002, LA-UR-03-5923, Los Alamos National Laboratory, Los Alamos, New Mexico.

LANL, 2003, "Los Alamos National Laboratory Technical Area 16 Part B Permit Renewal Application", Revision 4.0, June 2003, LA-UR-03-3903, Los Alamos National Laboratory, Los Alamos, New Mexico.

TABLE D-1

TA-16

Emergency Equipment

FIRE CONTROL EQUIPMENT

Fire extinguishers are located at or in:

Tank-truck garage (TA-16-1507)
Control Building (TA-16-389)
High Explosives Wastewater Treatment Facility (HEWTF) (TA-16-1508)
Each truck used to transport high explosives

General Capabilities
These portable units may be used by any properly trained employee in the event of fire.

Seven fire hydrants are located at the TA-16 Burn Ground.

General Capabilities
The fire hydrants will supply water at adequate volume and pressure to satisfy the requirements of the New Mexico Administrative Code, Title 20, Chapter 4, Part 1, § 264.32, revised June 14, 2000.

Water spigots are located at TA-16-388 and TA-16-399.

A fire alarm pull station is located at the HEWTF.

The Central Alarm Station is notified before all open burning operations. In dry conditions, when operations may result in a grass fire, the Los Alamos County Fire Department is notified and requested to prepare to respond.

SPILL CONTROL

Portable berms to contain spills are stored in an all-weather cabinet near the center of the TA-16 Burn Ground, at the less-than-90-day storage area (TA-16-386), and beside the Control Building.

COMMUNICATION EQUIPMENT

Telephones are available at the Control Building, at the HEWTF, and at the railroad gate at the entrance to the Burn Ground.

General Capabilities
Telephones for internal and external communication are available for use by all employees.

DECONTAMINATION EQUIPMENT

Eyewash stations are located in the tank-truck garage and in the HEWTF.

Water spigots with hoses attached are available at the TA-16-388 Flash Pad/Burn Tray and the TA-16-399 HE Burn Tray for general wash down.

Material Safety Data Sheets (MSDS) are available at the Control Building.

General Capabilities

Eyewashes are used by personnel who receive a chemical splash to the eyes. MSDSs for the chemical(s) should be obtained prior to working with hazardous waste or hazardous material to determine if the application water is indicated for decontamination. The MSDSs are also maintained to provide information during emergency response.

PERSONNEL PROTECTION EQUIPMENT

Respirators, coveralls, and safety glasses are available for TA-16 personnel during waste-handling operations.

All vehicles are equipped with first-aid kits.

TA-50

ATTACHMENT D

CONTINGENCY PLAN

TA-50
ATTACHMENT D
CONTINGENCY PLAN

In accordance with the New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20.4.1 NMAC), Subpart V, Part 264, Subpart D, "Contingency Plan and Emergency Procedures," and 20.4.1 NMAC, Subpart IX, 270.14(b)(7), revised June 14, 2000, contingency measures applicable to the hazardous and mixed waste container storage units (CSU) at Technical Area (TA) 50 are provided in this Attachment's General Section.

Figure E-1 (LANL, 2002) shows evacuation routes and muster areas that may be used in the event of an emergency. In addition, lists of emergency equipment currently available for use at TA-50 CSUs are included in Table D-1 below. A list of emergency equipment (including spill equipment) available from the Hazardous Materials Response Group is presented in Table D-1 in this Attachment. Evacuation routes, muster area locations, and emergency equipment are subject to change.

Hazardous and mixed waste spills are managed by type and severity of the incident. If a hazardous/mixed waste spill occurs, the Incident Command evaluates the type and severity of the spill and determines if assistance from LANL's Emergency Management Response Group is required. If not, the spill is managed internally by TA-50 personnel.

REFERENCES

LANL, 1998, "Los Alamos National Laboratory General Part B Permit Application," Revision 1.0, Los Alamos National Laboratory, Los Alamos, New Mexico.

LANL, 2002, "Los Alamos National Laboratory Technical Area 50 Part B Permit Renewal Application", Revision 3.0, August 2002, LA-UR-02-4739, Los Alamos National Laboratory, Los Alamos, New Mexico.

Table D-1

TA-50

EMERGENCY EQUIPMENT

FIRE CONTROL EQUIPMENT

- **FIRE EXTINGUISHERS**

  Description of General Capabilities

  The fire extinguishers are portable, manually operated units and may be used by any employee in case of fire. They consist of Class ABC or BC rated~~A, B, and C units of approximately 9 to 15 pounds capacity used in wet chemical laboratory applications~~.

  Locations

  2 fire extinguishers are located in TA-50-69, Indoor Container Storage Unit (CSU) (Room—102)

  1 fire extinguisher is located ~~within 20 feet (ft) of~~at the TA-50-69, Outdoor CSU

- **FIRE ALARM PULL BOXES CONNECTED TO THE CENTRAL ALARM STATION**

  Description of General Capabilities

  Fire alarms may be activated by any employee in the event of fire to notify the Central Alarm Station. Upon activation, fire alarm horns and strobes provide audible and visual signals for personnel notification. The fire alarm is a pulsing sound. The evacuation alarm is a wailing sound that can be heard throughout TA-50-69, Indoor CSU and at the TA-50-69, Outdoor CSU.

  Locations

  Three~~wo~~ fire alarm pull stations are located in the TA-50-69, Indoor CSU. ~~One is just inside the south door of Room 102 and the other is inside the east door of TA-50-69.~~ Personnel working at the TA-50-69, Outdoor CSU may use the pull stations at TA-50-69 in the event of a fire.

- **AUTOMATIC FIRE SUPPRESSION SYSTEM**

  Description of General Capabilities

  A wet-pipe automatic sprinkler system that is hydraulically designed for ordinary hazard Group II coverage is in place throughout TA-50-69. This system is activated at 100°C (212°F). ~~The glovebox cutting and disassembly modules are equipped with an automatic water deluge sprinkler system. One sprinkler head is mounted on the west wall of the cutting module and one sprinkler head is mounted on the east wall of the disassembly module. Additionally, a manually operated carbon dioxide (CO_2) system is in place inside the cutting enclosure which allows an operator to apply CO_2 to minor flare-ups that can originate on the waste item being cut up with the plasma-torch. The CO_2 system cannot over pressurize the enclosure.~~

  Locations

  Throughout TA-50-69, as described above.

- **FIRE HYDRANT**
  Description of General Capabilities
  Fire hydrants provide water for fire fighting. All fire hydrants are supplied by an 8-inch (in.) water line connected to the 12-in. water main on Pecos Drive.

  Location
  A fire hydrant is located approximately 55 ft west of TA-50-69.

SPILL CONTROL EQUIPMENT

- ~~**CURBING AND DRAINS**~~
  ~~The main process room (Room 102) and unloading area (Room 103) at TA-50-69 provide secondary containment by use of curbs or floor drains. The storage capacity plus curbed area storage would be adequate to contain water generated during fire fighting.~~

- **SPILL CONTROL EQUIPMENT~~CENTERS~~**
  Description of General Capabilities
  The spill control kits may contain items such as ~~centers contain at a minimum personnel protective equipment (i.e., gloves), and~~ absorbents (i.e., pillows and pigs) or weighted tarps. The Emergency Management and Response Group provides additional spill control and clean up equipment as needed.

  Spill ~~Center~~ Control Kit Location
  ~~2 - TA-50-69, Indoor CSU (Room 102)~~
  ~~2 - TA-50-69, Outdoor CSU~~The spill kits are located in TA-50-69 and at the TA-50-69 Outdoor CSU

COMMUNICATION EQUIPMENT

Description of General Capabilities
Telephones with public address (PA) capabilities for internal and external communication 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. The fire alarm is a double slow whoop sound. The evacuation alarm is a high-pitched wailing sound. The PA system can be heard at the TA-50-69, Outdoor CSU. When working at the CSUs, personnel will have immediate access to emergency communication equipment either directly or through visual or voice contact with another employee.

Location of Communication Equipment
~~Four t~~Telephones~~, three~~ with PA capabilities, are located in TA-50-69.~~ One is located outside Room 104 near the door~~. Personnel working at the TA-50-69, Outdoor CSU have access to the phone outside Room 104, will carry cellular phones, or will have immediate access to communication equipment through visual or voice contact with another employee.

DECONTAMINATION EQUIPMENT

- **SAFETY SHOWERS**

  Description of General Capabilities

  Safety showers are available to personnel who receive a chemical splash to the skin.

  Location of Safety Showers

  A s~~S~~afety shower~~s~~ is ~~are~~ located in TA-50-69, Room 102~~ and Room 103~~. One standard shower is located adjacent to the change room in TA-50-69.

- **EYEWASHES**

  Description of General Capabilities

  Eyewashes are available to personnel who receive a chemical splash to the eye(s). Specific MSDSs for the chemicals being managed are available hard copy or via online database to personnel working with hazardous or mixed waste to determine if the application of water is indicated for decontamination.

  Location of Eyewashes and Material Safety Data Sheets

  An eyewash is located in the TA-50-69, Indoor CSU (Room 102). ~~The safety shower and eyewash in TA-50-69 are available to personnel working at the TA-50-69, Outdoor CSU.~~A portable eyewash station will be available during active waste management operations at the Outdoor CSU if waste with free liquids is being managed.

- **PERSONAL PROTECTIVE EQUIPMENT**

  Appropriate personal protective equipment (PPE) will be worn to protect from hazards found in the workplace under normal conditions. This PPE may include gloves, steel-toed shoes, and safety glasses. Additional PPE may be required during an unusual hazardous situation and may be found in the spill kits at various locations throughout the site.

- **OTHER**

  Continuous air monitors, giraffe monitors, or other appropriated air monitoring equipment (as determine by health physics personnel) may be located in the container storage units for detection of airborne radioactive constituents.

TA-54

ATTACHMENT D

CONTINGENCY PLAN

TA-54
ATTACHMENT D
CONTINGENCY PLAN

In accordance with the New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20.4.1 NMAC), Subpart V, Part 264, Subpart D, and 20.4.1 NMAC § 270.14(b)(7), revised June 14, 2000, contingency measures applicable to the hazardous and mixed waste management units at Technical Area (TA) 54 are provided in this Attachment's General Section.

Listings of emergency equipment currently available for use at Area L, Area G, and TA-54 West are presented in Tables D-1 through D-3 below. Figures E-1 and E-2 (LANL, 2003) show evacuation routes and muster areas that may be used at TA-54 in the event of an emergency. Emergency equipment, evacuation routes, and muster area locations are subject to change.

REFERENCES

LANL, 2002, "Los Alamos National Laboratory General Part B Permit Renewal Application", Revision 2.0, August 2002, LA-UR-03-5923, Los Alamos National Laboratory, Los Alamos, New Mexico.

LANL, 2003, "Los Alamos National Laboratory Technical Area 54 Part B Permit Renewal Application", Revision 3.0, June 2003, LA-UR-03-3579, Los Alamos National Laboratory, Los Alamos, New Mexico.

TABLE D-1

TA-54 AREA L

Emergency Equipment

FIRE CONTROL EQUIPMENT

6 Class ABC and BC rated fire extinguishers are located at Area L
~~6~~ Class D rated fire extinguishers are available at Area L if combustible metals are being managed ~~Halon, water, dry chemical, and/or carbon dioxide fire extinguishers are available at TA-54-37, TA-54-60, TA-54-51, TA-54-32, TA-54-39, the southeast end of Area L, TA-54-31, 30 feet from the southeast side of TA-54-32, TA-54-117, TA-54-62, on the forklift and Bobcat operating in Area L, TA-54-68, TA-54-69, TA-54-70, TA-54-185, TA-54-215, and TA-54-221.~~

A dry-pipe sprinkler system is located at TA-54-215.

3 Dry chemical fire-suppression systems are located in storage sheds TA-54-68, TA-54-69, and TA-54-70.~~Dry chemical fire-suppression systems are located in the storage sheds.~~

Description of General Capabilities:
Fire extinguishers may be used by any qualified employee in the event of a small fire. The automatic dry-pipe sprinkler system is heat activated. Security personnel~~Protection Technology Los Alamos (PTLA)~~ and the Los Alamos County Fire Department (LACFD) are alerted when this system has been activated.

Fire alarm pull boxes are located inside TA-54-37, TA-54-39, TA-54-51, TA-54-60, TA-54-117, TA-54-210, and TA-54-221.

Description of General Capabilities:
Fire alarms may be activated by any employee in the event of a fire to notify the LACFD and security personnel~~PTLA~~.

2 fire hydrants located near the main site entrance to Area L and at the southeast corner of TA-54-62 inside Area L~~There are fire hydrants located near TA-54-37 and the southeast corner of TA-54-62.~~. These fire hydrants supply water at an adequate volume and pressure to satisfy the requirements of the New Mexico Administrative Code, Title 20, Chapter 4, Part 1, Subpart V, 264.32, revised January 1, 1997.

2 ~~A~~ freeze-proof faucets are~~is~~ located ~~approximately 25 feet~~ east of TA-54-31.

SPILL CONTROL EQUIPMENT

Shovels ~~(located in TA-54-46)~~
Oversized drums ~~(various locations on site)~~
Absorbent (various locations on site)
Heavy equipment from Area G available for any emergencies at Area L

Spill kits are located throughout Area L. Each kit includes bags of ~~Zorball~~absorbent, caustic neutralizer, acid neutralizer, and an inventory of tools and supplies..

COMMUNICATION EQUIPMENT

Alpha numeric emergency pagers are given to employees working in the area

Telephones are located in TA-54-32, TA-54-55~~37~~, TA-54-62~~51~~, ~~TA-54-60, TA-54-62, TA-54-117, TA-54-185, TA-54-210, TA-54-211,~~ and TA-54-~~221~~1058.

Fire alarm pull boxes are locate at TA-54-215

Emergency paging system-loud speaker located throughout the site. ~~Paging phones and e~~Evacuation alarms are located adjacent to the fenceline crash gates at Area L, at the northeast end of TA-54-32, the exterior west end of TA-54-215~~, at TA-54-37,~~ and at TA-54-62.

Additional equipment includes two-way radios and cellular~~portable~~ telephones.

Description of General Capabilities:

External and internal Laboratory communications which may be used in emergency situations are listed.

Fire alarm may be activated by any employee in the event of a fire to notify the LACFD and security personnel.

Employees can be notified of an emergency situation and appropriate response actions through the use of a text message sent on the emergency alpha-numeric pagers.

The evacuation alarm is a pulsating sound that can be heard throughout Area L. The fire alarm is a double slow-whoop sound.

The emergency paging system can be utilized to alert workers of an emergency situation as well as appropriate response actions.

DECONTAMINATION EQUIPMENT

Emergency shower and eyewash stations are located immediately east of TA-54-31, at TA-54-215, at TA-54-35, and at TA-54-39.

Material Safety Data Sheets (MSDS) are available ~~in TA-54-46~~hard copy or via online database at the facility.

Description of General Capabilities:

Emergency shower and eyewash stations 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 ~~hazardous or mixed waste~~ the chemical to determine if the application of water is indicated for decontamination.

PERSONAL PROTECTIVE EQUIPMENT

Personnel at Area L are required to use appropriate personal protective equipment (PPE) to protect themselves from the hazards found in the workplace under normal conditions. This PPE may include gloves, steel-toed shoes, and safety glasses. Additional PPE may be required during an unusual hazardous situation or during sampling activities ~~and can be found in the spill kits or at TA-54-50~~.

~~Self-contained breathing apparatus are located in TA-54-50.~~

~~Gloves, goggles, safety glasses, coveralls, and face shields are found in the spill kits located throughout Area L.~~Spill kits throughout Area L may contain PPE items such as: gloves, goggles, safety glasses, coveralls, and face shields.

Table D-2
TA-54 AREA G
Emergency Equipment

FIRE CONTROL EQUIPMENT

~~Halon, water, and/or carbon dioxide~~ ABC and/or BC rated fire extinguishers are available at ~~TA-54-2,~~ TA-54-8, ~~TA-54-11, TA-54-20,~~ TA-54-33, TA-54-48, TA-54-49, ~~TA-54-92,~~ TA-54-153, TA-54-224, TA-54-226, TA-54-229, TA-54-230, TA-54-231, TA-54-232, TA-54-283, TA-54-375, and TA-54-412, and on Pads 9 & 10.

Description of General Capabilities:
These portable, manually operated ~~F~~fire extinguishers may be used by any qualified employee in the event of a small fire. For larger fires, security personnel~~Protection Technology Los Alamos (PTLA)~~ and the Los Alamos County Fire Department (LACFD) are alerted.

Flame or smoke detection equipment and fire alarm pull stations will be located within structures at TA-54-226, TA-54-229, TA-54-230, TA-54-231, and TA-54-232.

Dry-chemical fire suppression systems are available at TA-54-1027, TA-54-1028, TA-54-1030, and TA-54-1041.

A dry-pipe fire suppression system is available at TA-54-412.

Fire alarm pull stations are available at ~~TA-54-2, TA-54-11,~~ TA-54-33, TA-54-48, TA-54-49, TA-54-153, TA-54-224, TA-54-226, TA-54-229, TA-54-230, TA-54-231, TA-54-232, ~~TA-54-273,~~ TA-54-283, TA-54-375, and TA-54-412.

Description of General Capabilities:
Fire alarms may be activated by any employee in the event of a fire to notify the LACFD and security personnel~~PTLA~~. Security personnel and LACFD are also notified upon activation of the flame or smoke detectors.

Several fire hydrants are located in Area G. These fire hydrants will supply water at an adequate volume and pressure to satisfy the requirements of the New Mexico Administrative Code, Title 20, Chapter 4, Part 1, § 264.32, revised June 14, 2000.

SPILL CONTROL EQUIPMENT

Spill control stations and/or portable spill kits are located at TA-54-8, ~~TA-54-11, TA-54-20,~~ TA-54-33, TA-54-48, TA-54-49, ~~TA-54-92,~~ TA-54-153, TA-54-224, TA-54-226, TA-54-229, TA-54-230, TA-54-231, TA-54-232, TA-54-283, TA-54-375, and TA-54-412.

Each spill kit generally includes bags of ~~Zorball~~ absorbent and an inventory of tools and supplies.

COMMUNICATION EQUIPMENT

Alpha-numeric emergency pagers are given to employees working in the area.

Emergency paging system- loud speakers located throughout the site.~~Pole-mounted paging telephones are located near TA-54-33, TA-54-48, TA-54-49, TA-54-153, TA-54-224, TA-54-226, TA-54-229, TA-54-230, TA-54-231, TA-54-232, and TA-54-283, inside TA-54-2, and at TA-54-11, and TA-54-412.~~

Evacuation alarm buttons are located at or near ~~TA-54-2, TA-54-11,~~ TA-54-33, TA-54-48, TA-54-49, TA-54-153, TA-54-224, TA-54-226, TA-54-229, TA-54-230, TA-54-231, TA-54-232, TA-54-283, TA-54-375, TA-54-412, Pads 9 & 10 and at various muster stations.

Additional equipment includes portable two-way radios ~~located at muster stations~~and cellular telephones.

Description of General Capabilities:
Loud speakers, t~~T~~elephones and alarms are located throughout Area G. Paging telephones are equipped with public address capabilities. Evacuation alarms have horns mounted on telephone poles throughout Area G. The evacuation alarm is a ~~high-pitched wailing sound~~is an audible alarm that can be heard throughout Area G. Employees can be notified of an emergency situation and appropriate response action through the use of a text message sent on the emergency alpha-numeric pagers. The emergency paging system can be utilized to alert workers of an emergency situation as well as appropriate response actions.

DECONTAMINATION EQUIPMENT

Portable eyewash stations ~~equipped with first aid kits~~ are located ~~in TA-54-33, TA-54-224, and TA-54-412~~at TA-54 CSUs during waste management operations involving free liquids.

One permanent, hard-plumbed eyewash station and a safety shower is~~are~~ located in TA-54-33.

Material Safety Data Sheets (MSDS) are available hard coy or via online database~~and waste characterization documentation are available in the event of an exposure~~.

Description of General Capabilities:
Emergency shower and eyewash stations are used by personnel who receive a chemical splash to the skin or eyes. Specific MSDSs for the chemical(s) being managed should be obtained prior to working with hazardous or mixed waste to determine if the application of water is indicated for decontamination.

PERSONAL PROTECTIVE EQUIPMENT

Personnel at Area G are required to use appropriate personal protective equipment (PPE) to protect themselves from the hazards found in the workplace under normal

conditions. This PPE may include gloves, steel-toed shoes, and safety glasses. Additional PPE may be required during an unusual hazardous situation and can be found in the spill kits or at various locations listed below throughout the site.

Gloves and goggles or safety glasses are available in the spill kits located at TA-54-8, TA-54-11, TA-54-20, TA-54-33, TA-54-48, TA-54-49, TA-54-92, TA-54-153, TA-54-224, TA-54-226, TA-54-229, TA-54-230, TA-54-231, TA-54-232, TA-54-283, TA-54-375, and TA-54-412.

OTHER

Continuous air monitors and giraffe monitors (or other appropriate air monitoring equipment) are located in many of the container storage units TA-54-33, TA-54-48, TA-54-49, TA-54-153, TA-54-224, TA-54-226, TA-54-229, TA-54-230, TA-54-231, TA-54-232, TA-54-283, TA-54-375, TA-54-412, TA-54-1027, and TA-54-1028 for detection of airborne radioactive constituents.

Heavy equipment available on site includes:

- Scraper
- Back hoe
- Bulldozer
- Front-end loader

Portable emergency generators

Vehicles available to evacuate personnel from Area G include:

- All-terrain vehicles
- Pickup truck
- Flat-bed truck
- Daihatsu vehiclesMicro trucks
- Vans

TABLE D-3

TA-54 WEST

Emergency Equipment

FIRE CONTROL EQUIPMENT

~~Halon~~ ABC and/or BC fire extinguishers are available at TA-54-38 in the high and low bays and at the outdoor container storage unit.

Description of General Capabilities:
Fire extinguishers may be used by any employee in the event of a small fire. Security personnel~~Protection Technology Los Alamos (PTLA)~~ and the Los Alamos County Fire Department (LACFD) are alerted when the automatic dry-pipe sprinkler system has been activated.

A dry-pipe sprinkler system is available throughout TA-54-38, including the loading dock area. The dry-pipe sprinkler system is heat activated in the high bay and at the loading dock. It is smoke activated in the low bay.

Fire alarm pull boxes are available inside TA-54-38 at the main entrance, in the high bay, and in the low bay.

Description of General Capabilities:
Fire alarms may be activated by any employee in the event of a fire to notify the LACFD and security personnel ~~PTLA~~.

A fire hydrant is located ~~approximately 220 feet~~ west of TA-54-38 near the entrance to TA-54 West. This fire hydrant supplies water at adequate volume and pressure to satisfy the requirements of the New Mexico Administrative Code, Title 20, Chapter 4, Part 1, § 264.32, revised June 14, 2000.

A wall hydrant is located on the ~~north~~west side of TA-54-38.

Freeze-proof faucets are located on the ~~north~~west, south~~west~~, and ~~south~~east sides of TA-54-38.

SPILL CONTROL EQUIPMENT

A mobile response kit is located at TA-54-38. The kit includes absorbent socks, pillows, and sheets; goggles; and large plastic bags.

COMMUNICATION EQUIPMENT

Evacuation alarm buttons are located at the high bay, the low bay, and the main entrance to TA-54-38.

Telephones with public address (PA) capabilities are located in TA-54-38 in the high bay, in the low bay, and outside the main entrance. An emergency telephone is also located outside the main entrance.

Alpha-numeric emergency pagers are given to employees working in the area.

Additional equipment includes cellular phones.

Description of General Capabilities:
Telephones with PA capabilities for internal and external communication are available for use by any employee. Employees can be notified of an emergency situation and appropriate response actions through the use of a text message sent on the emergency alpha-numeric pagers. The evacuation alarm ~~is a high-pitched wailing sound that~~ can be heard throughout TA-54-38 and TA-54-34. The fire alarm is a double slow-whoop sound. Fire and evacuation alarms are activated in the event of a fire or evacuation. The emergency paging phone can be utilized to alert workers of an emergency situation as well as appropriate response actions.

DECONTAMINATION EQUIPMENT

Safety showers and portable eyewash stations are located in TA-54-38 in the high bay and on the loading dock. The portable eyewash stations will be present during active wate management operations involving free liquids at these locations.

Material Safety Data Sheets (MSDS) are ~~located at the TA-54-38 muster area (approximately 120 feet northwest of TA-54-38) and in the TA-54-38 main entry area~~available hard copy or via online database.

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

PERSONAL PROTECTIVE EQUIPMENT

Personnel at TA-54 West are required to use appropriate personal protective equipment (PPE) to protect themselves from the hazards found in the workplace under normal conditions. This PPE includes gloves, steel-toed shoes, and safety glasses. Additional PPE may be required during an unusual hazardous situation and can be found in the spill kits or at various locations throughout the site or at adjacent TA-54 facilities.

Gloves and~~,~~ goggles~~, safety glasses, coveralls, and face shields~~ are found in the spill kits located at TA-54-38.

All workers located within the operating limits of a crane (fixed or mobile) wear hard hats.

TA-55

ATTACHMENT D

CONTINGENCY PLAN

TA-55
ATTACHMENT D
CONTINGENCY PLAN

In accordance with the New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20.4.1 NMAC) Subpart V, Part 264, Subpart D and 20.4.1 NMAC §270.14(b)(7), revised June 14, 2000, contingency measures applicable to the hazardous and mixed waste management units at Technical Area (TA) 55 are provided in this Attachment's General Section.

Figure E-1 (LANL, 2003) shows evacuation routes and muster areas that may be used at TA-55 in the event of an emergency. In addition, lists of emergency equipment currently available for use at TA-55 are included as Tables D-1 through D-4 in this Attachment. A list of emergency equipment (including spill control equipment) available from the Hazardous Materials Response Group is presented in Table D-2 of this Attachment's General Section. Evacuation routes, muster area locations, and emergency equipment are subject to change. Emergency equipment discussed in this plan may be replaced and/or upgraded with functionally equivalent components and equipment as necessary for routine maintenance and repairs.

Hazardous waste spills are managed by type and severity of the incident. If a hazardous waste spill occurs, the Incident Command evaluates the type and severity of the spill and determines if assistance from LANL's Emergency Management and Response Group is required. If not, the spill is managed internally by TA-55 personnel.

REFERENCES

LANL, 2002, "Los Alamos National Laboratory General Part B Permit Renewal Application", Revision 2.0, August 2002, LA-UR-03-5923, Los Alamos National Laboratory, Los Alamos, New Mexico.

LANL, 2003, "Los Alamos National Laboratory Technical Area 54 Part B Permit Renewal Application", Revision 3.0, June 2003, LA-UR-03-3579, Los Alamos National Laboratory, Los Alamos, New Mexico.

Table D-1
TA-55 VAULT
Emergency Equipment

FIRE CONTROL EQUIPMENT

Dry-chemical fire extinguishers are located in Room 401.

Description of General Capabilities:

The fire extinguishers are portable, manually-operated units and can be used by any employee in case of fire. The fire extinguishers in Room 401 are for use only in case of fire outside the gloveboxes.

Fire alarm pull boxes and push button stations are available in Room 401.

Description of General Capabilities:

Fire alarms can be activated by any employee in the event of fire to notify the Central Alarm Station.

An automatic fire suppression sprinkler system is located in Room 401.

Automatic thermal alarms are located in the gloveboxes in Room 401.

Fire hydrants are located outdoors on the north, south, and west sides of TA-55-4.

SPILL CONTROL EQUIPMENT

Room 401 provides secondary containment for the storage tank system and cementation unit.

COMMUNICATION EQUIPMENT

Telephones are located in Room 401. The telephones are capable of handling incoming/outgoing calls and paging.

A telephone is located at each of the two west exit doors of TA-55-4.

Two-way radios are available from the Nuclear Materials Technology Facility Incident Command located at TA-55-3, Room 179, for personnel working in Room 401.

Alarms at TA-55-4:
The fire alarm is a zone-wide whooping sound.

If a drop-box pushbutton station is used, a zone-wide, high-pitched constant tone will be activated and then switch to the standard whooping sound.

The evacuation alarm is a facility-wide mid-range pulsating tone.

The continuous air monitor alarm is a local high-pitched pulsating tone.

The ventilation alarm is a local slow, repeating chime tone.

The public address system may also be used to announce an evacuation.

DECONTAMINATION EQUIPMENT

Safety showers and eyewash stations are located in Room 401.

Description of General Capabilities:

Safety showers and eyewashes are available for decontamination of personnel who receive a chemical splash to the skin or eyes.

Material Safety Data Sheets (MSDS) are available in Room 401 and at TA-55-4.

Specific MSDSs may be obtained prior to working with any hazardous waste to determine if the application of water is indicated for decontamination.

PERSONAL PROTECTIVE EQUIPMENT

Self-contained breathing apparatus (SCBA) are located in the southside hallway outside of Room 401, in the northside hallway of TA-55-4, and in TA-55-3, Room 179. The SCBAs are available for personnel working in or near Room 401.

Change/decontamination rooms with protective clothing available are located on the first floor of TA-55-4 and in TA-55-3. Protective clothing is also available in a locker located in the hallway near Room 401 for use by personnel working in or near Room 401.

Respirators located in TA-55-3 (Room 107) and in TA-55-4 (Room 515) are available for all personnel working in or near TA-55-4. Respirators are re-issued on a regular basis to TA-55-4 personnel for radiation work. These respirators are stored in the personnel's individual lockers. Combination gas canisters (particulate, organic, and acid) are available in TA-55-4 (Room 515).

OTHER:

If transportation is needed for evacuation, vehicles may be obtained through the Emergency Management and Response Group.

TABLE D-2

TA-55 Building 4 Basement

Emergency Equipment

FIRE CONTROL EQUIPMENT

Halon, dry chemical, and/or carbon dioxide fire extinguishers are available near B40, B05, K13, B45, and the Vault.

Description of General Capabilities:
The fire extinguishers are portable, manually-operated units and can be used by any employee in case of fire.

Fire alarm pull boxes are located at B05, K13, B45, the Vault, and on each side of the fire door.

Description of General Capabilities:
Fire alarms can be activated by any employee in the event of fire to notify the Central Alarm System.

An automatic fire suppression sprinkler system is located throughout the basement at TA-55-4, including the Vault and the office and corridor associated with the Vault.

Fire hydrants are located outdoors on the north, south, and west sides of TA-55-4.

SPILL CONTROL EQUIPMENT

Self-containment pallets or cabinets are provided for containers of liquid and/or potentially liquid-bearing wastes stored at B40, K13, and the Vault.

COMMUNICATION EQUIPMENT

Telephones and intercom stations are located throughout the basement of TA-55-4. The telephones are capable of handling both incoming and outgoing calls. The intercom system is connected to the TA-55-3 Operations Center and allows the Operations Center to easily mobilize emergency response support.

Two-way radios are available from the Nuclear Materials Technology Facility Incident Command located at TA-55-3, Room 179, for personnel working in the basement at TA-55-4.

Personal pagers are issued to and carried by assigned personnel working in the basement of TA-55-4. These pagers are accessed by telephone.

Alarms at TA-55-4:

The fire alarm is an area-wide whooping sound.

The evacuation alarm is a facility-wide mid-range pulsating tone.

The continuous air monitor alarm is a local high-pitched pulsating tone.

The ventilation alarm is a local slow, repeating chime tone.

The public address system activated from the TA-55-3 Operations Center may be used to announce an evacuation.

A site-wide paging system activated from the TA-55-3 Operations Center can be heard throughout TA-55-4.

DECONTAMINATION EQUIPMENT

Eyewashes are located throughout the basement of TA-55-4.

Description of General Capabilities:
The eyewash stations are available for decontamination of personnel who receive a chemical splash to the eyes.

Safety showers are located near B40, K13 and in the office for the Vault.

Description of General Capabilities:
The safety showers are available for decontamination of personnel who receive a chemical splash to the skin.

Material Safety Data Sheets (MSDSs) are available at TA-55-41. Specific MSDSs may be obtained prior to working with any hazardous waste to determine if the application of water is indicated for decontamination.

PERSONAL PROTECTIVE EQUIPMENT

Change/decontamination rooms with protective clothing available are located on the first floor of TA-55-4 and in TA-55-3.

Respirators located in TA-55-4 and in TA-55-3 are available for all personnel working in or near TA-55-4. Particulate and toxic gas canisters are available in TA-55-4.

Self-contained breathing apparatus are located in the TA-55, Basement.

OTHER:
If transportation is needed for evacuation, vehicles may be obtained through the Emergency Management and Response Group.

Forklifts stored in the basement are available for use in the basement and are stored near the north basement doorway.

TABLE D-3
TA-55 CONTAINER STORAGE PAD
Emergency Equipment

FIRE CONTROL EQUIPMENT

A dry chemical fire extinguisher is located on the Container Storage Pad.

Description of General Capabilities:
The fire extinguishers are portable, manually-operated units and can be used by any employee in case of fire.

Fire hydrants are located along the north, south, and west sides of TA-55-4.

One fire hydrant is located just south of the Container Storage Pad.

Fire alarm pull boxes are located in TA-55-42 at the northwest corner of TA-55-4.

One fire alarm pull box is located outside on the south side of TA-55-4.

COMMUNICATION EQUIPMENT

A telephone is located on the east side of TA-55-11, and additional phones are located in TA-55-185 and on the south side of TA-55-4.

Two-way radios are available from the Nuclear Materials Technology (NMT) Facility Incident Command located at TA-55-3, Room 179, for personnel working at the Container Storage Pad.

Personal pagers are issued to and carried by assigned personnel working at the Container Storage Pad. These pagers are accessed by telephone.

Alarms at TA-55:
The fire alarm is an area-wide whooping sound.

The evacuation alarm is a facility-wide mid-range pulsating tone.

The public address (PA) system activated from the TA-55-3 Operations Center may be used to announce an evacuation. PA speakers are located on the west side of TA-55-4.

Two intercom systems to the TA-55-3 Operations Center are located on the south and north sides of TA-55-4.

DECONTAMINATION EQUIPMENT

A safety shower and eyewash station are located outdoors on the Container Storage Pad.

Description of General Capabilities:
The safety shower and eyewash are available for personnel who receive a chemical splash to the skin or eyes.

Material Safety Data Sheets (MSDSs) are available at TA-55-2. Specific MSDSs may be obtained prior to working with any hazardous waste to determine if the application of water is indicated for decontamination.

PERSONAL PROTECTIVE EQUIPMENT

Change rooms with protective clothing available are located on the first floor of TA-55-4 and in TA-55-3.

Respirators are located in TA-55-4 and in TA-55-3 for all personnel working in or near TA-55-4.

OTHER:

If transportation is needed for evacuation, vehicles may be obtained through the Emergency Management and Response Group.

Two forklifts are available for NMT-7 use.

TABLE D-4

TA-55 BUILDING 185

Emergency Equipment

FIRE CONTROL EQUIPMENT:
Fire hydrants are located along the north, south, and west sides of TA-55, Building 4 (TA-55-4).

One fire alarm pull box is located inside TA-55-185.

Fire alarm pull boxes are located in TA-55, Building 42, at the northwest corner of TA-55-4.

One fire alarm pull box is located outside on the south side of TA-55-4.

COMMUNICATION EQUIPMENT:
One telephone is located inside TA-55-185.

A telephone is located on the east side of TA-55-11 and additional phones are located in TA-55-185 and on the south side of TA-55-4.

Two-way radios are available from the Nuclear Materials Technology (NMT) Facility Incident Command located at TA-55-3, Room 179, for personnel working at TA-55-185.

Personal pagers are issued to and carried by assigned personnel working at TA-55-185. These pagers are accessed by telephone.

Alarms at TA-55-4:
The fire alarm is an area-wide whooping sound.

The evacuation alarm is a facility-wide mid-range pulsating tone.

The pubic address (PA) system activated from the TA-55-3 Operations Center may be used to announce an evacuation.

PA speakers are located on the west side of TA-55-4 near TA-55-185. Intercom systems to the TA-55-3 Operations Center are located on the south and north sides of TA-55-4.

DECONTAMINATION EQUIPMENT:
TA-55-185 will be equipped with a portable safety shower and eyewash station before wastes are managed there.

PERSONAL PROTECTIVE EQUIPMENT:
Change rooms with protective clothing available are located in TA-55-3.

Respirators located in TA-55-4 and in TA-55-3 are available for all personnel working in or near TA-55-185.

OTHER:
If transportation is needed for evacuation, vehicles may be obtained through the Emergency Management and Response Group.

A forklift is available inside of TA-55-185.

Two forklifts are available to NMT-7.

Appendix I

Replacement Inspection Record Form for Permit Attachment E-Inspection Plan

HAZARDOUS WASTE FACILITY INSPECTION RECORD FORM

[1] FACILITY:	[2] Site ID #:	TREATMENT, STORAGE, OR DISPOSAL UNIT (TSD)	[3] START DATE:	[4] END DATE:

[5] Containers Landfill Chemical Treatment Tank Miscellaneous Unit (OB/OD, Cementation)

PART I- Enter condition of the item inspected **(**i.e. **OK**, **NA** [Not Applicable], or **AR** [Action Required]**)** in column for day inspected.

ITEM	INSPECTED FOR:	MON	TUE	WED	THU	FRI	SAT	SUN
[6] NO UNIT USE	No waste stored							
[7] NO WASTE HANDLING	No waste handled (see instructions)							
All TSDs								
[8] COMMUNICATIONS EQUIPMENT	Availability and proper operating condition							
[9] WARNING SIGNS	Posted, legible, and bilingual							
[10] SECURITY	Good condition of fences, gates, locks, and other access control equipment							
[11] WORK SURFACES/ FLOORS/ROADS	Absence of conditions that could lead to an accident or spill							
[12] SPILL/FIRE EQUIPMENT	Present, appropriate, and in proper operating condition							
[13] EYEWASHES/ SAFETY SHOWERS	Proper operating condition							
[14] WIND SOCK	Proper operating condition and functional							
[15] SECONDARY CONTAINMENT	Integrity- No standing water/waste, erosion, or signs of a spill							
[16] (UN)LOADING AREA	No spills or deterioration							
[17] RUN-ON/OFF CONTROL	Integrity- no ponding, erosion, or damage							
Container Storage Units and/or Tanks (see instructions)								
[18] COVERS/LIDS OF CONTAINERS	Closed and secured properly							
[19] LABELS	Proper with start date, present & legible							
[20] COMPATIBILITY	Separated according to compatibility							
[21] INTEGRITY	No leakage, corrosion, or damage							
[22] AISLE SPACE/STACKING	Appropriateness and adequacy							

HAZARDOUS WASTE FACILITY INSPECTION RECORD FORM

FACILITY:	Site ID #:	START DATE:	END DATE:

ITEM	INSPECTED FOR:	MON	TUE	WED	THU	FRI	SAT	SUN
[23] PALLETS AND RAISED CONTAINERS	Absence of conditions that could result in failure							
[24] TANK SYSTEMS	Discharge controls and fill level and no corrosion or leakage							
Other TSDs								
[25] SHAFTS/LANDFILL COVERS	Presence and condition of cover							
[26] OPEN BURNING UNITS	Condition of cover, and no erosion, leakage, or damage							
[27] OPEN DETONATION UNITS	Unit and vegetation condition and no erosion							
[28] CEMENTATION UNITS	Structural integrity and condition of equipment and systems							

	MON	TUE	WED	THU	FRI	SAT	SUN
[29] **DATE**							
[30] **TIME**							
[31] **INSPECTOR(S)**							

Part II- For any AR (Action Required) in PART I, describe below: action required, action taken, status, date, and time of action. Attach additional sheets if necessary. If more than one action is required, number each AR.

[32]

Part III- Comments.

[33]

Instructions for the Hazardous Waste Facility Inspection Record
Treatment, Storage, or Disposal Units (TSDs)

Part I

Weekly and daily inspection of TSDs will be conducted in accordance with the inspection plan in most recent Los Alamos National Laboratory (LANL) General Part B Permit Application or the LANL Hazardous Waste Facility Permit, as appropriate. Not all items in this section will apply to all facilities. An "NA" (not applicable) is required if the item does not apply. Facilities may shade parts of the form to indicate items that need to be completed only on a weekly basis. Holidays and Laboratory closures can also be noted (e.g., by writing "H" (for holidays) or "Closed" in the first box and drawing a line all the way down the page).

1. Location information, including TA, building, room (if applicable), and any other location descriptors that may be necessary (e.g., TA-59-3-114 or TA-59-1-S, Dock).
2. A site identification number is assigned to every facility by the Resource Conservation and Recovery Act (RCRA) compliance personnel. This allows for ease in identification.
3. Start date of Monday for the week of record.
4. End date of Sunday for the week of record.
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 RCRA compliance personnel to combine inspections for more than one unit.
6. For container storage units only – "NO USE" may be checked (or marked "OK") if waste was not stored at the unit for the week in question. When this box is checked, the individual responsible for the inspection must only complete this box, the items related to site location (Items 1-5), and the inspector name section for that week (Items 29-31). If any hazardous or mixed waste is subsequently placed at the site for any reason, a full inspection must be performed immediately and then subsequently according to the appropriate inspection plan.
7. a. At a container storage unit if waste is in storage but no waste is handled at the unit for the week– "NO WASTE HANDLING" may be checked, but a weekly inspection in accordance with the appropriate inspection plan must be conducted.
   b. If a treatment unit is not conducting treatment for the week – "NO WASTE HANDLING" may be checked, but a weekly inspection in accordance with the appropriate inspection plan must be conducted.
   c. For a tank storage system unit, if no waste is being stored and the tank system is empty, "NO WASTE HANDLING" may be checked. However, a weekly inspection in accordance with the appropriate inspection plan must be conducted.
8. Communication equipment must be inspected in order to ensure availability and proper operating condition for each piece of equipment (e.g., telephones, radios, and alarms). Equipment must be present in accordance with the appropriate contingency plan.
9. Required signs must be legible and prominently posted in accordance with 40 CFR § 264.14(c) and/or the permit as applicable.
10. Site security must be verified. Items such as fences, gates, locks, and other access control equipment (as appropriate) should be checked for proper operating condition.
11. Roads, process floors, and other work surfaces at TSDs must be inspected for any conditions that could lead to a spill or an accident.
12. Hazardous or mixed waste TSDs must have fire control and spill control equipment. Equipment must be present, in proper operating condition, and appropriate for the material in question. Hose bibs, where present, should be inspected for proper operating condition and adequate pressure. Outdoor fire-water supply systems must be checked for freezing and damage. Equipment must be inspected and present in accordance with the appropriate inspection and contingency plans.
13. Where present, eyewashes and safety showers must be inspected to ensure proper operating condition. Outdoor locations must be checked for freezing.
14. Wind socks, where present at outside TSDs, must be inspected to ensure that they are in proper operating condition/functional and checked for damage.

15. Secondary containment structures for hazardous or mixed 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/mixed waste or any other indication of a spill (i.e. discolored vegetation, soil, or concrete). For certain operations, secondary containment includes inspection of gloves, gloveboxes, hoods, and ventilation systems. For locations where inflatable "Porta Berms" are used, inspectors must ensure that they are adequately inflated. All monitoring and leak detection systems must also be checked.
16. 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 covered areas and areas where containers or tanks are handled or the contents thereof are transferred.
17. Run-on and runoff controls, wherever present, must be checked. The integrity should be inspected by looking for signs of damage, erosion, ponding, or any other conditions that could lead to a spill or an accident.
18. All tanks and containers used for storing hazardous or mixed waste must have the cover or lid securely in place. Containers are not considered to be closed until the lid/cover is fastened in the manner the manufacturer originally intended. However, the lid may be off of a tank or container while waste is being placed into or removed from a container.
19. All containers and tanks containing hazardous or mixed waste must be labeled with the words "HAZARDOUS WASTE," and EPA Hazardous Waste Numbers or hazardous waste constituents. They must also be marked with a legible accumulation start date. All containers must be dated when they arrive at the facility and no hazardous or mixed waste may be stored for over one year, unless specifically exempted.
20. All hazardous or mixed 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.
21. All containers and tanks must be checked for structural integrity, leakage, corrosion, or damage that may impact integrity. This includes checking the condition of all construction materials, fixtures, seams, and auxiliary equipment. There are special inspection criteria for tank systems (see Item 24 below).
22. Adequate aisle space must be maintained to allow for inspection and for the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency. Containers of hazardous and mixed waste must be stored in a manner that ensures a minimum 2-foot aisle space and containers may not be stacked more than 3 high, unless otherwise specified for the facility (i.e. some units within the LANL Hazardous Waste Facility Permit must have an aisle space of 28 inches and only 55 gallon drums may be stored three high). Please consult RCRA compliance personnel for permit related questions.
23. Hazardous or mixed waste containers stored at TSDs must be on pallets, elevated, or otherwise raised to be protected from contact with accumulated liquid.

TANKS SYSTEMS:

24. For tank systems used for treatment or storage of hazardous or mixed waste, all aboveground portions of the tank system, including any and all ancillary plumbing, must be inspected 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.

SHAFTS:

25. Shafts used for retrievable storage should have their covers securely in place and the surrounding area should show no evidence of erosion. Disposal shafts and shafts used for retrievable storage should have their covers securely in place and, during waste handling operations, guard rails must be installed and in good condition. Landfill covers must be inspected at least weekly and after storms for evidence of erosion, subsidence, and water intrusion.

Instructions for the Hazardous Waste Facility Inspection Record
Treatment, Storage, or Disposal Units (TSDs)

OPEN BURNING UNITS:

26. Open burning units must be inspected for deterioration, leakage, vegetation in the immediate vicinity that could catch fire, and assure that the unit is covered when not in use. Inspectors must also look for explosives and debris not consumed during the burn.

OPEN DETONATION UNITS:

27. Open detonation units must be inspected for deterioration, leakage, or vegetation in the immediate vicinity that could catch fire. Inspectors must also look for explosives and debris not consumed by the detonation.

CEMENTATION UNITS:

28. The structural integrity and condition of equipment and systems must be inspected on cementation units. Units must also be inspected for signs of leaking, corrosion, deterioration, or improper operation.

FOR ALL INSPECTIONS:

29. Record of the date of the current inspection. Only one date is given for each inspection, whether a team or an individual performs the inspection.
30. Record of the time of the current inspection. Only one time is given for each inspection, whether a team or an individual performs the inspection.
31. Legible and/or printed name of each inspector involved in the current inspection.

Part II

List any action required.

32. Document any action taken immediately and express any plans for future action to be taken. Also, ensure that previous ARs are closed out with completed actions described. If the AR has not been resolved, ensure that it is carried over to the current inspection. Status should be provided for both open and closed items. If necessary, attach additional sheets to inspection record form to efficiently cover the action taken or required. Initial any information or comments added, and if more than one action is required or conducted, assign a number to each AR.

Part III

Identify any comments.

33. Document informational comments and any status associated with the current inspection that do not require specific regulatory action or remedies.

Appendix J

Permit Attachment G- Container Management with Editing Marks

ATTACHMENT G

CONTAINER MANAGEMENT

TA-3

ATTACHMENT G

CONTAINER STORAGE

TA-3
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LIST OF ABBREVIATIONS/ACRONYMS

CFR	Code of Federal Regulations
CMR	Chemistry and Metallurgy Research Building
CSU	container storage unit
DOT	U.S. Department of Transportation
ft	feet/foot
in	inch/inches
LANL	Los Alamos National Laboratory
m^3	cubic meters
20 NMAC 4.1	New Mexico Administrative Code, Title 20, Chapter 4, Part 1
PPE	personal protective equipment
ppmw	parts per million by weight
~~PTLA~~	~~Protection Technology Los Alamos~~
~~STTP~~	~~Actinide Source-Term Waste Test Program~~
SWB	standard waste box
TA	technical area
TRU	transuranic
WIPP	Waste Isolation Pilot Plant

TA-3
ATTACHMENT G
TA-3 CONTAINER MANAGEMENT

The information provided in this Attachment addresses the applicable container storage requirements of the New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20 NMAC 4.1), Subpart IX, 270.15, and 20 NMAC 4.1, Subpart V, Part 264, Subpart I., revised January 1, 1997 [1-1-97]. This Attachment provides an overview of current facility operations and waste management practices for the Technical Area (TA) 3, Building 29 (TA-3-29), Chemistry and Metallurgy Research (CMR) Building container storage unit (CSU) at Los Alamos National Laboratory (LANL) and complements the information provided in Section 2.0 of the LANL permit application (LANL, 1999). It includes detailed descriptions of the storage structures and locations within the TA-3-29 CSU and the current waste management practices associated with them.

G.1 CONTAINER STORAGE WITHIN TA-3-29

TA-3 is located in the northern portion of LANL on South Mesa between Los Alamos Canyon on the north and Two Mile Canyon on the south. Sandia and Mortandad Canyons head on the east margin of TA-3, forming steep cliffs at the top of canyon walls. TA-3-29, the CMR Building, was established in 1952 as a research facility. It is a three-story structure containing offices, laboratories, and one CSU located on the basement floor of Wing 9. The TA-3-29 CSU consists of three storage locations within Rooms 9010, 9020, and 9030 for storage of hazardous and mixed wastes. The following provides descriptions of the storage structures and locations for the TA-3-29 CSU.

G.1.1 TA-3-29 Room 9010

Room 9010 is located in the basement of Wing 9 of the CMR Building. It measures 21 feet (ft), 8 inches wide by 106 ft, 9 inches (in.) long (see Figure G-1 in LANL, 1999,). The floor is concrete and is painted with an epoxy sealant. Waste storage generally takes place in the lower level portion of Room 9010 but may also take place in or near two room enclosures, located within Room 9010 (9010A and 9010B). ~~, that currently contain the Actinide Source Term Waste Test Program (STTP) research experiments. These enclosures are described below.~~

~~The STTP is currently located within Room 9010 in two stand-alone enclosures (see Figure G-2 in LANL, 1999). The northern enclosure is approximately 10 ft wide by 24 ft long; the southern enclosure measures approximately 17 ft wide by 54 ft long. The enclosures have ceilings, walls with windows, and doors for entry through airlocks; the enclosures are anchored to the floor. The wall-to-floor joints are sealed with grout. Floors and the lower six inches of the interior enclosure walls are coated with an epoxy sealant. Each enclosure includes emergency and communication equipment as well as ventilation, fire sprinkler, water, and electrical support functions connected to the main building systems. The enclosures are kept at negative pressure by exhaust fans ducted to the building's high-efficiency particulate air filters to provide radioactive material air-release protection.~~

The maximum storage capacity of this room is 11,200 gallons or 206 55-gallon drum equivalents. Storage containers include 5, 10, 12, 15, 30, 55 and 85 gallon drums. Additionally, items greater than the above mentioned sizes (and free of liquids) will be staged and wrapped tightly in plastic prior to being shipped in DOT approved containers.

~~The STTP is designed to measure time-dependent concentrations of actinide elements from transuranic (TRU) waste immersed in brines that are chemically similar to brines typically found in the underground formations of the Waste Isolation Pilot Plant (WIPP). The STTP will determine the effect of TRU waste matrices and brine chemistry on the concentrations of actinides under WIPP bounding conditions and variables. It will also test the predictive capability of the Actinide Source-Term Program Model for mobilization of actinides. TRU waste types typical of U.S. Department of Energy waste inventories will be characterized and loaded into specially designed test containers filled with brine containing additives to enhance the action of each influencing variable. The experiments are currently located within the CSU for safe and efficient processing of the experimental containers and to assure that during and after the research experiments, the containers will be stored and managed in a manner that is protective of human health and the environment. The experiments housed within the STTP enclosures are in a phased-down mode and the enclosures may be relocated to a different building at LANL. The experiments in the STTP do not constitute a Resource Conservation and Recovery Act-regulated treatment process for the hazardous component of the mixed waste.~~

G.1.2 TA-3-29 Room 9020

Room 9020 is located in the basement of Wing 9 of the CMR Building and is approximately 27 ft wide by 141 ft long. The container storage location within Room 9020 measures 19 ft wide by 25 ft long (see Figure G-1 in LANL, 1999) and is located in the northeast end of the room. The floor is concrete and painted with an epoxy sealant. Waste storage takes place in a cleared area on the northeast side of Room 9020. The maximum storage capacity of this unit is 5,300 gallons or 96 55-gallon drum equivalents. Storage containers include 5, 10, 12, 15, 30, 55 and 85 gallon drums. Additionally, solid items greater than the above mentioned sizes (and free of liquids) will be staged and wrapped tightly in plastic prior to being shipped in DOT approved containers.

Security posts and chains are used to alert workers to the presence of waste containers.

G.1.3 TA-3-29 Room 9030

Room 9030 is located in the basement of Wing 9 in the CMR Building and is approximately 62 ft wide by 141 ft long. The container storage location within Room 9030 measures approximately 30 feet long by 8 feet wide (see Figure G-1 in LANL, 1999) and is located in the southwest corner of Room 9030. The CSU is used to store containers of hazardous and mixed waste that do not contain liquids. The maximum storage capacity of this unit is 2000 gallons, or 36 55-gallon drum equivalents. Storage containers include 5, 10, 12, 15, 30, 55 and 85 gallon drums. Additionally, items greater than the above mentioned sizes (and free of liquids) will be staged and wrapped tightly in plastic prior to being shipped in DOT approved containers. The floor is concrete and has been painted with an epoxy sealant. ~~Security posts and chains, used to alert workers to the presence of waste containers, are planned to be installed.~~

G.2 GENERAL FACILITY OPERATIONS AND WASTE MANAGEMENT PRACTICES [20 NMAC 4.1, SUBPART V, PART 264, SUBPART I]

The following provides an overview of current facility operations and waste management practices that are applicable to the TA-3-29 CSU. This overview includes a discussion of container handling and inspection; security and access control; preparedness and prevention; hazards prevention; special requirements for ignitable, reactive, or incompatible waste; and air emission standards for containers. This information is submitted to fulfill the requirements of 20 NMAC 4.1, Subpart V, Part 264, Subpart I [1-1-97]. Specific waste management practices and procedures detailed herein may be subject to change as a result of LANL safety and waste management policy changes.

G.2.1 Container Handling and Inspection [20 NMAC 4.1, Subpart V, 264.171, 264.173, and 264.174]

Handling and inspection requirements for containers stored within the TA-3-29 CSU are presented in Attachment E and Sections 2.5 and 2.7, respectively, of the TA-3 Part B permit application (LANL, 1999). This information is provided to meet the requirements of 20 NMAC 4.1, Subpart V, 264.171, 264.173, and 264.174 [1-1-97].

G.2.2 Security and Access [20 NMAC 4.1, Subpart IX, 270.14 (b)(4) and 270.14(b)(19)(viii); 20 NMAC 4.1, Subpart V, 264.14]

Security at TA-3-29, the CMR Building, is maintained with physical and administratively-controlled barriers. These barriers prevent the unknowing entry and minimize the possibility for unauthorized entry of persons or livestock into the areas and thus satisfy the requirements of 20 NMAC 4.1, Subpart V, 264.14(a) and 264.14(b)(2) [1-1-97].

Eight-foot-high chain-link security fences with barbed wire at the top surround the entire perimeter of TA-3-29. Pursuant to the requirements of 20 NMAC 4.1, Subpart V, 264.14(c) [1-1-97], bilingual (i.e., English and Spanish) warning signs are also posted at the entrances to each storage location within the TA-3-29 CSU and can be seen from any approach to these locations. The legends on the signs indicate "Danger: Hazardous Waste Storage Area" and "Unauthorized Personnel~~s~~ Keep Out." Existing signs with a legend other than "Danger-Unauthorized Personnel Keep Out" may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion, and that entry onto the active portion can be dangerous. The signs are legible from a distance of at least 25 ft.

There are four entry gates through the security fence at TA-3-29 (see Figure 2-1, Permit Part 2). A fire access and shipping gate is located south of TA-3-29 and is routinely closed and locked. When the gate is opened for shipments of material or waste, personnel are present at the gate to limit entry/exit by unauthorized persons. One combined pedestrian and vehicular unmanned badge reader entry gate ~~manned by security personnel~~ is located at the northwest corner of the TA-3-29 fence line. Another unmanned badge reader pedestrian gate ~~manned by security personnel~~ is located at the southeast corner of the building fence line. This gate is combined with a double vehicular gate which allows access from the parking area south of the building. ~~Protection Technology Los Alamos (PTLA) provides the S~~security personnel are present at each of these gates during operational hours to limit entry/exit by unauthorized persons.

Outside doors to the main wings of TA-3-29 are always locked. Access for visitors to the operational portion of the building is controlled through a manned security station in the east side lobby and another on the west side of the building. Roll-up doors to the building can only be opened from inside the building and are also locked; opening these doors must be coordinated with ~~PTLA~~ security personnel. The building site is patrolled by ~~PTLA~~ security personnel during non-operational hours to ensure that the gates are locked and that unauthorized entry has not occurred. The security fence is also inspected weekly by on-site personnel and repairs are made, as necessary. In accordance with 20 NMAC 4.1, Subpart IX, 270.14(b)(19)(viii) [1-1-97], the locations of the security fences, access gates, and guard and entry stations at TA-3-29 are shown in ~~Attachment A (~~Figure 2-1 in Permit Part 2~~)~~.

G.2.3 Preparedness and Prevention [20 NMAC 4.1, Subpart V, Subpart C; and 20 NMAC 4.1, Subpart IX, 270.14(b)(8)]

The following presents how waste management operations at the TA-3-29 CSU comply with the preparedness and prevention requirements of 20 NMAC 4.1, Subpart V, Part 264, Subpart C [1-1-97]. This section includes a discussion of emergency equipment required at the facility, testing and maintenance of this equipment, personnel access to communications or alarm systems, aisle space and storage configuration, and support agreements with outside agencies.

G.2.3.1 Required Equipment [20 NMAC 4.1, Subpart V, 264.32]

TA-3-29 is equipped with an audible alarm system to alert personnel to evacuate the area. The evacuation alarm system may be activated by facility personnel pushing one of the evacuation buttons located throughout TA-3-29. The building also contains a fire alarm system which may be activated by manual pull stations, heat and smoke detectors, and sprinkler system flow valves found throughout TA-3-29. Rooms 9010, 9020, 9030~~, and the STTP enclosures~~ contain wet-pipe sprinkler systems that are equipped with fusible-link heads that actuate at 212 degrees Fahrenheit. Wing 9 of TA-3-29 contains gamma alarms that monitor for the presence of gamma radioactive contamination. Continuous air monitors are utilized throughout TA-3-29 to detect airborne radioactive contamination and, when detected, sound an alarm. The building also has a public address system for announcing fires or evacuations. Telephones with paging capabilities are located throughout TA-3-29. Paging telephones are used to page on-site personnel and may be used in the event of an emergency to communicate the location and nature of hazardous conditions to personnel in the area. The alarm system is interrupted when the paging telephone system is activated to allow personnel to hear the announcement.

Personnel working in Rooms 9010, 9020, and 9030 can also use these phones to summon assistance from local emergency response teams in case of emergency.

The building is also equipped with fire extinguishers in Rooms 9010, 9020, and 9030 and pull stations in Rooms 9010 and 9020. Depending on the size of a fire and the fuel source, fire extinguishers may be used by on-site personnel. However, LANL policy encourages immediate evacuation of the area and notification of appropriate emergency personnel. The fire alarm control panel continuously monitors all fire-suppression and detection systems and transmits signals to the Los Alamos County Fire Department through LANL's central alarm system.

Fire hydrants installed according to National Fire Protection Association standards are located around the outside of TA-3-29 (see Figure E-3 in LANL, 1999). Water is supplied to the fire hydrants by a municipal water system through 8-in. pipes at an adequate volume and pressure (i.e., 200 gallons per minute and 90 pounds per square inch static pressure) to supply a water hose in the event of a fire.

Spill centers are located at the south end of Room 9010~~ and in the STTP enclosures~~. They contain sorbent pillows, safety glasses, and gloves. Trained personnel may use this equipment to mitigate small containable spills when they are certain their actions will not put themselves or others at risk. Personnel decontamination equipment available includes safety showers and emergency eyewashes in the enclosures in Room 9010, 9020 and room 9030.~~ Personnel working in Room 9020 have access to the eyewashes in the Room 9010 enclosures and a safety shower and emergency eyewash in Room 9030.~~ The buddy system will always be employed when containers are actively managed in Rooms 9010, 9020, and 9030 to assure that safety showers and eyewashes can be reached in an emergency. Material Safety Data Sheets provide useful exposure information and are available in Room 9010, Room 9030, and outside Room 9130.

G.2.3.2 Testing and Maintenance of Equipment [20 NMAC 4.1, Subpart V, 264.33]

The communication, alarm system, fire protection, spill control, and decontamination equipment associated with operations at the TA-3-29 CSU is inspected and/or tested according to the inspection schedule detailed in Attachment D (*Contingency Plan*). Maintenance, repair, and replacement of emergency equipment are performed, as needed.

G.2.3.3 Access to Communications or Alarm System [20 NMAC 4.1, Subpart V, 264.34]

Whenever waste is being handled at the TA-3-29 CSU, all personnel involved have immediate access to internal alarms or telephones in Rooms 9010, 9020, and 9030 either directly or through visual or voice contact with another individual. In the event of an emergency, communication equipment allows personnel to contact the CMR Operations Center, operating group management, ~~the~~ Emergency Management and Response ~~Office~~personnel, and/or the Central Alarm Station operator. In addition to the communications and alarm systems described in Section G.2.3.1, on-site personnel may carry pagers so that they can be contacted by on-site and LANL emergency support personnel at all times.

G.2.3.4 Aisle Space and Storage Configuration [20 NMAC 4.1, Subpart V, 264.35]

Information on aisle space and storage configurations for the TA-3-29 CSU is presented in ~~Permit~~ Part 3 of this Permit. ~~and Section 2.1.3 of the TA-3 Part B permit application (LANL, 1999).~~ This information meets the requirements of 20 NMAC 4.1, Subpart V, 264.35 [1-1-97].

G.2.3.5 Support Agreements with Outside Agencies [20 NMAC 4.1, Subpart V, 264.37(a)]

LANL maintains support agreements and contracts with outside agencies for emergency response assistance. Information regarding these contracts and support agreements is provided in Attachment D (*Contingency Plan*).

G.2.4 Hazards Prevention [20 NMAC 4.1, Subpart V, Part 264, Subpart C; 20 NMAC 4.1, Subpart IX, 270.14(b)(8)]

The TA-3-29 CSU is designed and operated to minimize the possibility of fire, explosion, or unplanned releases of hazardous constituents to the environment. The following discusses the general procedures, equipment, and structures that are currently used at TA-3-29 to prevent hazards. This includes preventing hazards during unloading of waste containers, preventing run-on and runoff, preventing contamination of the water supply, mitigating the effects of power outages, preventing undue exposure to personnel, and preventing releases to the atmosphere.

G.2.4.1 Preventing Hazards in Unloading

~~Trucks conforming to LANL specifications for Type B shipments requiring road closures are used to transport hazardous and mixed waste containers to TA-3-29 for storage and processing. The STTP waste drums are moved with individual multi-wheel dollies set into the bottom of the drums. STTP liter-scale test containers are moved with specialized fixtures referred to as "six-packs". The packaged wastes are unloaded by hydraulic lift onto the ground and moved into the south entrance of Wing 9 at TA-3-29. An electric, riding lift truck equipped with a blunt-~~

~~ended drum grappler may be used to unload drums from the delivery truck one at a time. The drum grapplers will be equipped with blocks to prevent drums from being damaged. Metal standard waste boxes (SWB) and other large containers will be handled with a diesel forklift.~~ Hand ~~trucks or dollies~~trucks, dollies or casters will be used to move waste containers from the loading area to the CSU. Should a spill occur during waste handling activities, management of the spill and/or residual material will be performed in accordance with the Contingency Plan (see Attachment D).

The methods used to move drums at or within the TA-3-29 CSU will be selected based on the type of structure on which the drum is located. Drums on dollies will be moved manually. ~~Drums located on secondary containment pallets will be moved using lift trucks equipped with drum grapplers. Drums containing liquids will only be set on dollies for placement at process equipment stations. The lift trucks will also be used to return drums from dollies to secondary containment pallets.~~ A ~~forklift~~ pallet jack will be used to move SWBs. The use of proper handling equipment, appropriate to a container's size and weight, helps to prevent hazards while moving containers within the CSU. All damaged containers (e.g., severely corroded drums) are repaired or overpacked or the wastes are repackaged in new containers before being stored at the CSU.

G.2.4.2 Preventing Run-on and Runoff [20 NMAC 4.1, Subpart IX, 270.14(b)(8)(ii)]

Run-on and runoff control methods for the TA-3-29 CSU are presented in Section 2.10 of the TA-3 Part B permit application (LANL, 1999). This information is provided to meet the requirements of 20 NMAC 4.1, Subpart IX, 270.14(b)(8)(ii) [1-1-97].

G.2.4.3 Preventing Water Supply Contamination [20 NMAC 4.1, Subpart IX, 270.14(b)(8)(iii)]

It is not anticipated that there will be any impact to groundwater or other water supplies as a result of waste-handling operations at the TA-3-29 CSU. The CSU is located inside the building and any material spilled during waste management activities will be remediated pursuant to the appropriate contingency plan as part of normal operations. In addition, potential liquid-bearing wastes will be stored in secondary containment systems or on self-containment pallets. All water supply lines are under pressure and are equipped with backflow prevention devices to prevent contamination of these lines during emergencies. The depth to groundwater at TA-3-29 is approximately 1,100 ft (Purtymun, 1984). Geologic units underlying similar waste management units at TA-54 include layers of unsaturated volcanic tuff and ash, the moisture content of which ranges from 0.2 to 2.0 percent by weight (IT, 1987). This moisture content is

insufficient for direct moisture migration through the Bandelier Tuff. Thus, no impact to groundwater is expected due to the release of the wastes managed at these units.

G.2.4.4 Mitigating Effects of Power Outages [20 NMAC 4.1, Subpart IX, 270.14(b)(8)(iv)]

Electrical power is supplied to TA-3-29 by a 13.8 kilovolt distribution line through an underground conduit to an on-site substation. Supplied power is used to operate continuous air monitors and other electrical equipment in the building. In the event of a power failure, operations in the building would cease and personnel would exit the facility. Operations in the storage locations would be discontinued temporarily if electrical power was not restored quickly or if container handling equipment failed. However, neither a power outage nor an equipment failure would affect containment at any of these locations.

G.2.4.5 Preventing Undue Exposure [20 NMAC 4.1, Subpart IX, 270.14(b)(8)(v)]

Personnel at the TA-3-29 CSU are required to use appropriate personal protective equipment (PPE) to protect themselves from the hazards found in the work place under normal conditions. Use of PPE protects workers from direct contact with and inhalation or ingestion of hazardous materials. At TA-3-29, PPE is used routinely during waste-handling operations and when responding to unusual hazardous situations. The different levels of PPE are defined by the Occupational Safety and Health Administration as follows:

- *Level D*: Coveralls; safety boots; safety glasses or goggles; hard hat; and appropriate gloves
- *Level C*: Full-face, air-purifying respirator with appropriate cartridges for the chemicals or hazards present; chemical-resistant suits; chemical-resistant safety boots or booties; and inner and outer gloves
- *Level B*: All Level C equipment plus self-contained breathing apparatus in place of a Level C full-face respirator
- *Level A*: All Level B equipment, plus a fully-encapsulating chemical-resistant suit.

Most operations at the TA-3-29 CSU require that personnel handling wastes or working in the CSU wear modified Level D PPE (safety glasses and hard hats are not always required). There are instances where an increased level of PPE is required, such as during an emergency or unusual hazardous situation. All personnel that use PPE are trained and qualified to use the equipment properly.

G.2.4.6 Preventing Releases to the Atmosphere

Releases to the atmosphere are not anticipated at the TA-3-29 CSU because containers are kept closed during storage. The only exceptions to this practice are when, upon inspection, it is

determined that a container currently in storage needs to be overpacked or repackaged in a new container.

G.2.5 Special Requirements for Ignitible, Reactive, and Incompatible Wastes [20 NMAC 4.1, Subpart IX, 270.14(b)(9), 270.15(c) and (d); 20 NMAC 4.1, Subpart V, 264.17, 264.176, and 264.177]

Special requirements for ignitable, reactive, or incompatible waste at the TA-3-29 CSU are presented in Permit Part 2 (Section 2.8). This information is provided to meet the requirements of

20 NMAC 4.1, Subpart V, 264.17(a), 264.176, and 264.177(a)(b) and (c); and 20 NMAC 4.1, Subpart IX, 270.14(b)(9) and 270.15(d) [1-1-97].

G.2.6 Air Emission Standards for Containers [40 CFR, Part 264, Subpart CC]

The hazardous wastes stored in containers at TA-3-29 may be subject to the Code of Federal Regulations (CFR), Title 40, Part 264, Subpart CC, "Air Emission Standards for Tanks, Surface Impoundments, and Containers," based on the applicability criteria specified in 40 CFR 264.1080. Subpart CC standards for containers, as currently set forth by the U.S. Environmental Protection Agency, require that containers of hazardous waste be covered so there are no detectable emissions. These standards are not applicable to mixed waste management units. The standards are also not applicable to containers of hazardous waste with less than 500 parts per million by weight (ppmw) volatile organics, containers of less than 0.1 cubic meters (m^3) (approximately 26 gallons) capacity, or that have received waste prior to the effective date of regulation (December 6, 1996). LANL requires that Subpart CC requirements be met by the generator as part of the waste characterization process. The generator determines whether the concentration of volatile organics in a waste stream at the point of generation is less than 500 ppmw, or is equal to or greater than 500 ppmw. The generator documents this determination for that waste stream, as described in Attachment C (*Waste Analysis Plan*).

Containers of less than 0.46 m^3 (approximately 119 gallons) capacity and that meet U.S. Department of Transportation (DOT) specifications under 49 CFR, Part 178, will be kept closed during storage pursuant to 40 CFR 264.1086(b)(1)(ii). Containers undergoing waste characterization activities may be opened for access for the purposes described in 40 CFR 264.1086(c). Containers of greater than 0.46 m^3 capacity that contain waste with greater than 500 ppmw volatile organics or those that are greater than 0.1 m^3 capacity, do not meet DOT specifications, and contain wastes of greater than 500 ppmw volatile organics will be subject to

a visual inspection and monitoring program as required by 40 CFR 264.1088(b) and addressed in Attachment C (*Inspection Plan*).

G.3 REFERENCES

LANL, 1999, "Los Alamos National Laboratory Technical Area 3, Building 29, Chemistry and Metallurgy and Research Building, Part B Permit Application," Revision 0.0 (Project No. 774830.21), Los Alamos National Laboratory, Los Alamos, New Mexico.

LANL, 1998, "Los Alamos National Laboratory General Part B Permit Application," Revision 1.0, Los Alamos National Laboratory, Los Alamos, New Mexico.

IT, 1987, "Hydrogeologic Assessment of Technical Area 54, Areas G and L, Los Alamos National Laboratory," Docket No. NMHWA 001007, IT Corporation, Albuquerque, New Mexico.

Purtyman, 1984, "Hydrologic Characteristics of the Main Aquifer in the Los Alamos Area: Development of Ground Water Supplies," Los Alamos National Laboratory Report LA-9957-MS, Los Alamos, New Mexico.

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CONTAINER STORAGE

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LIST OF ABBREVIATIONS/ACRONYMS

20.4.1 NMAC	New Mexico Administrative Code, Title 20, Chapter 4, Part 1
CAM	continuous air monitor
CSU	container storage unit
FRP	fiberglass-reinforced plywood
ft	feet/foot
LANL	Los Alamos National Laboratory
m^3	cubic meters
MDA	Material Disposal Area
ppmw	parts per million by weight
TA	Technical Area
TRU	transuranic
WCRRF	Waste Characterization, Reduction, and Repackaging Facility

TA-50
CONTAINER MANAGEMENT

The information provided in this Attachment addresses the applicable container storage requirements of the New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20.4.1 NMAC), Subpart IX, 270.15, and 20.4.1 NMAC, Subpart V, Part 264, Subpart I , revised June 14, 2000 [6-14-00]. This Attachment provides an overview of current facility operations and waste management practices for the Technical Area (TA) 50 container storage units at Los Alamos National Laboratory (LANL) and complements the information provided in Section 2.0 of the TA-50 Part B permit renewal application (LANL, 2002). It includes detailed descriptions of the TA-50 container storage units (CSUs) and the waste management practices associated with them.

G.1 CONTAINER STORAGE

TA-50 is located at the northeast corner of the intersection of Pajarito Drive and Pecos Road, on the finger mesa bounded by Mortandad Canyon to the north and Two-Mile Canyon to the south. TA-50-69 is located in the southwest quadrant of TA-50 and was constructed in 1979 to house the Waste Characterization, Reduction, and Repackaging Facility (WCRRF) (formerly the Size Reduction Facility). The primary purpose of WCRRF was to size reduce large metallic items (e.g., glove boxes and other process equipment) that were transuric (TRU)-contaminated and repackage them into standard-sized containers capable for transportation and disposal at the Waste Isolation Pilot Plant. The facility was first used to size reduce mixed TRU waste in 1982. The original function of the WCRRF has since been expanded to include other activities related to hazardous and mixed waste management including waste characterization, TRU/MTRU prohibited item disposition and repackaging operations —and experimental process demonstration support.

TA-50-69 is a single-story building constructed in two phases. The original structure (45 feet (ft) by 52 ft) was built in 1979, to house the main process room (Room 102) and personnel change rooms. An unloading area (Room 103) and a vehicle airlock entrance (Room 104) were added to the building in 1986. The dimensions of the 1986 addition are 20 ft by 36 ft. The longest dimension of the building is now 88 ft, and the building is oriented northwest-southeast. A mezzanine was also added in 1986 over the western third of the main process room. The

exterior walls of TA-50-69 are load-bearing and constructed of structural steel framing with a plastic veneer finish on polystyrene insulation and gypsum wallboard. The interior walls are

similarly constructed. The epoxy-painted floor of the building is a reinforced concrete slab on compacted fill. The CSUs at TA-50 include the TA-50-69, Indoor CSU and the TA-50-69, Outdoor CSU.

G.1.1 TA-50-69, Indoor CSU

The TA-50-69, Indoor CSU consists of Rooms 102 and 103 as shown in Figure G-1 (LANL, 2002). Room 102, the main process room, measures approximately 45 ft wide and 52 ft long. The long dimension is oriented northwest-southeast. Room 103, the unloading area, measures approximately 18 ft wide and 19 ft long and is located adjacent to and southeast of Room 102. A 12-ft by 20-ft roll-up vehicle access door is located at the southernmost end of Room 103, separating the unloading area (Room 103) from the vehicle airlock entrance (Room 104). This design allows for unobstructed transport of oversized fiberglass-reinforced plywood (FRP) boxes from outside the facility, through the vehicle airlock entrance, into the unloading area, and into the glove box cutting enclosure.

G.1.2 TA-50-69, Outdoor CSU

The TA-50-69, Outdoor CSU was constructed before 1980, and was first used to store mixed waste in 1982. It is located in the southwest corner of TA-50. The TA-50-69, Outdoor CSU (see Figure G-1 in LANL, 2002) asphalt pad is not lined or coated, and measures 24 ft wide and 90 ft long, with an additional strip 12 ft wide and 90 ft long added to the southeast end. The asphalt pad is approximately 4 in. thick. The long dimension of this CSU is oriented east-southeast. The pad slopes gently (approximately 1 to 5 percent) from west to east and up to 2.5 percent toward the centerline. Transportainers and other weather protective structures (i.e., containers covered with tarps, containers inside SWBs) within the TA-50-69, Outdoor CSU provide weather protection for containers of various sizes. Supplement 2-1 (LANL, 2002) provides detailed information regarding standard transportainers. Painted lines are used to visually delineate the TA-50-69, Outdoor CSU boundary.

G.2 GENERAL FACILITY OPERATIONS AND WASTE MANAGEMENT PRACTICES

The following provides an overview of current facility operations and waste management practices that are applicable to the TA-50 CSUs. This overview includes a discussion of container handling and inspection; security and access control; preparedness and prevention;

hazards prevention; special requirements for ignitable, reactive, or incompatible waste; and air emission standards for containers. This information is submitted to fulfill the requirements of 20.4.1 NMAC, Subpart V, Part 264, Subpart I [6-14-00]. Specific waste management practices and procedures detailed herein may be subject to change as a result of LANL safety and waste management policy changes.

G.2.1 Container Handling and Inspection

Handling and inspection requirements for containers stored within the TA-50 CSU are presented in Part 3 and Attachment E~~ and in Sections 2.1.5 and 2.1.7, respectively, of the TA-50 Part B permit renewal application (LANL, 2002)~~. This information is provided to meet the requirements of 20.4.1 NMAC, Subpart V, 264.171, 264.173, and 264.174 [6-14-00].

G.2.2 Security and Access

Security at TA-50 is predominantly maintained with artificial barriers. These barriers prevent the unknowing entry and minimize the possibility for unauthorized entry of persons or livestock into the area and, thus, satisfy the requirements of 20.4.1 NMAC, Subpart V, 264.14(a) and (b)(2) [6-14-00].

An 8-ft high chain-link security fence surrounds the entire perimeter of TA-50. Bilingual (i.e., English and Spanish) warning signs are posted on the fences at approximately 50- to 75-ft intervals. In accordance with the requirements of 20.4.1 NMAC, Subpart V, 264.14(c) [6-14-00], warning signs are also posted at the entrances to each area that will manage hazardous and mixed waste and are visible from any approach to these areas. The legends on the posted signs indicate "Danger. Hazardous Waste Storage Area" and "Unauthorized Personnel~~s~~ Keep Out." Existing signs with a legend other than "Danger-Unauthorized Personnel Keep Out" may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion, and that entry onto the active portion can be dangerous. The signs are legible from a distance of 25 ft. In addition, signs will be posted at the entrance to each hazardous and mixed waste management area to address requirements associated with entering and working in the area.

There are four entry gates into TA-50. Two entry gates are located north of TA-50-1. During normal business hours, the easternmost of these two gates may remain open to receive deliveries. After normal business hours, this gate is padlocked. The westernmost of these two gates is the main access gate and remains open during normal business hours for personal and

government-owned passenger vehicles. After normal business hours, access through this gate is by badge-reader only. A fire access and shipping gate is located west of TA-50-69 and is routinely kept closed and locked. When this gate is opened for shipments of materials or waste, facility personnel are present in the yard west of TA-50-69 to limit egress by unauthorized persons. A fourth gate to the south of TA-50-1 is locked except when authorized access is necessary. TA-50 is patrolled by Protection Technology Los Alamos security personnel during non-operational hours to ensure that unauthorized entry has not occurred. In accordance with 20.4.1 NMAC, Subpart IX, 270.14(b)(19)(viii) [6-14-00], the locations of the security fences and entry gates at TA-50 are shown on Figure A-10 (LANL, 2002).

TA-50-69 ~~is always locked and~~ access is controlled through a centralized Operations Center located in TA-50-84~~gained by a badge reader~~. ~~Doors to the building and transportainers are locked. Keys to these doors are distributed to designated personnel only. Building access also limits access to the Indoor CSU. Access to the TA-50-69, Outdoor CSU is controlled by a~~A chain is installed at the East end of the operations area and adjacent to TA-50-84 and is posted with the bilingual hazardous waste unit sign~~around the CSU and a posted sign that indicates "Authorized Personnel Only.~~"

G.2.3 Preparedness and Prevention

The following sections present how waste management operations at TA-50 comply with the preparedness and prevention requirements of 20.4.1 NMAC, Subpart V, Part 264, Subpart C [6-14-00]. Additional information on the communication and alarm equipment available at LANL as well as a list of the emergency equipment available for use at the TA-50 CSUs is presented in Attachment D (*Contingency Plan*).

G.2.3.1 Required Equipment [20.4.1 NMAC, Subpart V, 264.32]

All personnel involved in waste management activities at the TA-50 CSUs have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another individual in accordance with 20.4.1 NMAC, Subpart V, 264.34 [6-14-00]. In the event of an emergency, this communication equipment will allow personnel to contact the operating group management, the Emergency Management and Response Office, and/or the Central Alarm Station operator.

TA-50-69 is equipped with an audible alarm system to alert personnel to evacuate the area. The alarm system may be activated by one of the fire alarm pull stations located throughout the

building. TA-50-69 also has a public address system for announcing fires or evacuations and telephones with paging capabilities. Paging telephones are used to page on-site personnel and may be used in the event of an emergency to communicate the location and nature of hazardous conditions to personnel in the area. The alarm system is interrupted when the paging telephone system is activated to allow personnel to hear the announcement. Personnel can also use these phones to summon assistance from local emergency response teams in case of emergency. Personnel may carry pagers, two-way radios, and/or cellular telephones so they can contact or be contacted by on-site and LANL emergency support personnel at all times.

TA-50-69 is equipped with fire extinguishers and fire suppression systems. Depending on the size of a fire and the fuel source, fire extinguishers may be used by on-site personnel. However, LANL policy encourages immediate evacuation of the area and notification of appropriate emergency personnel. The fire alarm control panel continuously monitors all fire suppression and detection systems and transmits signals to the Los Alamos County Fire Department through LANL central alarm system.

A fire hydrant installed according to National Fire Protection Association standards is located approximately 55 ft west of TA-50-69. Water is supplied to the fire hydrant by a municipal water system through 8 inch pipes at an adequate volume and pressure (i.e., 200 gallons per minute and 90 pounds per square inch static pressure) to supply a water hose in the event of a fire.

TA-50-69 has an automatic wet-pipe sprinkler system in the main building and in the large glove box enclosure. The sprinkler system is heat-activated at 100°C (212°F). The TA-50-69, Outdoor CSU transportainers and weather protective structures are not equipped with automatic sprinkler systems, but are provided with a fire extinguisher located within 20-ft of the CSU. Personnel may use the fire alarm pull station at TA-50-69 in the event of a fire at both the Indoor and Outdoor CSUs.

Two spill centers are located in TA-50-69 in Room 102. They contain spill control equipment, personal protective equipment, and sorbents. Trained personnel may use this equipment to mitigate small containable spills when they are certain their actions will not put themselves or others at risk. EM&R provides additional spill control equipment and assistance upon request and depending on the size and severity of the spill. Personnel decontamination equipment available includes safety showers and eye wash stations located at TA-50-69. Material safety data sheets located at all operations areas provide useful exposure information.

G.2.3.2 Testing and Maintenance of Equipment [20.4.1 NMAC, Subpart V, 264.33]

The communication, alarm systems, fire protection, spill control, and decontamination equipment described above are tested and/or maintained according to the inspection schedule provided in Attachment E (*Inspection Plan*). The frequency of inspection is adequate to ensure proper operation in the event of an emergency. Repair and replacement of emergency equipment is performed as required.

G.2.3.3 Access to Communications or Alarm System

Whenever waste is being handled at the TA-50 CSUs, the ~~centralized~~ Operations Center located in TA-50-84 is aware of all personnel in the ~~-~~area. Workers~~ and involved have~~~~they~~ have immediate access to internal alarms or telephones either directly or through visual or voice contact with another individual. In the event of an emergency, communication equipment allows personnel to contact the ~~operating group management,~~centralized Operations Center,~~ the~~ Emergency Management and Response ~~Office~~personnel, and/or the Central Alarm Station operator. In addition to the communications and alarm systems described in Section G.2.3.1, on-site personnel may carry pagers so that they can be contacted on-site and LANL emergency support personnel at all times.

G.2.3.4 Aisle Space and Storage Configuration

Information on aisle space and storage configurations for the TA-50 CSUs is presented in Permit Part 3, Section 3.5.1, and Section 2.1.3 of the TA-50 Part B permit renewal application (LANL, 2002). This information is provided to meet the requirements of 20.4.1 NMAC, Subpart V, 264.35 [6-14-00].

G.2.3.5 Support Agreements with Outside Agencies

LANL maintains support agreements and contracts with outside agencies for emergency response assistance. Information regarding these contracts and support agreements is provided in Attachment D (*Contingency Plan*).

G.2.4 Hazards Prevention [20.4.1 NMAC, Subpart IX, 270.14(b)(8) and 20.4.1 NMAC, Subpart V, Part 264 Subpart C]

In accordance with 20.4.1 NMAC, Subpart V, Part 264, Subpart C and 20.4.1 NMAC, Subpart IX, 270.14(b)(8) [6-14-00], the TA-50 CSUs addressed in this Attachment are designed and operated to minimize the possibility of fire, explosion, or unplanned releases of hazardous

constituents to any environmental medium. The following sections describe the general preventive procedures, structures, and equipment at the TA-50 CSUs to meet these requirements. Adherence to the procedures and proper use of the structures and equipment will help to prevent hazards and exposure to personnel and releases to the environment.

G.2.4.1 Preventing Hazards in Unloading

TA-50 personnel will use proper handling equipment, appropriate to a container's size and weight, to help prevent hazards while moving containers within the CSUs. Flatbed trucks or trailers will be used to transport containers to TA-50-69 for storage and processing. A forklift will be used to move containers at the TA-50-69, Outdoor CSU, from outside the building into the TA-50-69 airlock, and then within the TA-50-69, Indoor CSU. FRP boxes and palletized drums will be handled with a forklift equipped with tines. Individual drums of waste will be manipulated with a drum-grapple attachment on the forklift. Small containers may be handled manually or with a dolly. Inside TA-50-69, two cranes are available to move heavy objects. Load limits are restricted to the rated capacity of these cranes for safe operation. All damaged containers (e.g., severely corroded drums) will be repaired or overpacked, or the wastes repackaged in new containers before being staged at the CSUs.

Waste management personnel at TA-50 do not perform loading/unloading operations during precipitation events. All ~~The~~ waste containers~~stored in~~ at the TA-50 CSUs are handled in a manner that will not cause them to rupture or leak, as required in 40 CFR § 264.173(b)~~is Waste Isolation Pilot Plant-certifiable and does not contain free liquids; therefore, if a drum is opened and the contents spilled, it is easily contained~~. In the case of spills, on-site personnel follow site procedures, emergency response plans, and implement the Attachment D (*Contingency Plan*), if necessary.~~ Because the waste does not contain free liquids, secondary containment and temporary berms are not necessary during loading/unloading operations.~~

G.2.4.2 Runoff and Runon Controls [20.4.1 NMAC, Subpart V, 264.31 and 264.175(b); and 20.4.1 NMAC, Subpart IX, 270.15(a)(4) and (5)]

Runoff from the TA-50 CSUs to other areas or to the environment will be prevented. Engineered surfaces/structures or secondary containment pallets/devices are provided for potential liquid-bearing containers. All secondary containment systems are sufficient to contain at least 10 percent of the volume of potential liquid-bearing containers or the volume of the largest

container, whichever is greater, in accordance with the requirements of 20.4.1 NMAC, Subpart V, 264.175(b)(3) [6-14-00].

As a practice at TA-50, runoff and erosion controls are designed to guide surface water away from waste management activities and into the natural drainages. Storm water feeds into Mortandad Canyon and is managed according to the Clean Water Act. Liquids that may accumulate in the self-containment pallets as a result of leaks or spills will be collected into a container using a portable pump and/or sorbents, depending on the volume of accumulated liquid. Accumulated liquids will be removed as soon as possible and sampled in accordance with Attachment D (*Contingency Plan*).

G.2.4.2.1 TA-50-69, Indoor CSU

Run-on into the TA-50-69, Indoor CSU from outdoors is not likely to occur due to positive surface drainage that directs potential run-on away from the building. Figure A-11 (LANL, 2002) provides the contours and surface drainage around TA-50. The northern and eastern portions of TA-50 drain mainly to an unlined channel on the boundary between TA-50 and TA-35 (east of TA-50), although some flow diverges into a shallow channel running southward between TA-50-37 and TA-50-1.

To meet the requirements of 20.4.1 NMAC, Subpart IX, 270.15(a)(5) [6-14-00], any liquids that may accumulate within the self-containment pallets or devices, trenches and pits, or glove box enclosure will be removed as soon as possible to prevent overflow. The accumulated liquid will be sampled and analyzed. Depending upon the volume of the accumulated liquid, a high-efficiency particulate air vacuum, portable pump, universal sorbents, and/or other methods suitable for retrieval will be used to remove the liquid. Accumulated liquids are removed as soon as possible. The collected liquids and/or sorbents will be transferred to compatible containers, which will be stored temporarily at the respective CSU pending sample analysis, which will dictate how the wastes will be managed. Should a spill occur during waste handling activities, the spill and/or residual material will be sampled and managed in accordance with Attachment D (*Contingency Plan*).

G.2.4.2.2 TA-50-69, Outdoor CSU

Run-on into the TA-50-69, Outdoor CSU is prevented because the CSU is elevated by design. The TA-50-69, Outdoor CSU is sloped sufficiently to prevent the accumulation of precipitation. In addition, drainage swales located in the vicinity, divert storm water away from the pad. One

drainage swale is located just south of the CSU, between it and the material disposal area (MDA)-C. A second drainage swale is located on the west side of the CSU between Pecos Drive and the TA-50 fence line. Inspections of TA-50 waste management facilities, areas that may be prone to soil erosion and drainage control structures are conducted as described in the "Storm Water Pollution Prevention Plan for Technical Area 50 Waste Treatment Facilities" (LANL, 1993). Together, the containment design and operations meet the requirements of 20.4.1 NMAC, Subpart V, 264.175(b), and 20.4.1 NMAC, Subpart IX, 270.15(a)(4) [6-14-00].

G.2.4.3 Preventing Water Supply Contamination [20.4.1 NMAC, Subpart V, 264.31]

It is not anticipated that there will be any impact to groundwater or other water supplies as a result of waste-handling operations at TA-50 CSUs. The TA-50-69, Indoor CSU is located inside a building. Any material spilled during waste management activities are immediately remediated pursuant to Attachment D (*Contingency Plan*). All water supply lines at TA-50 are under pressure and are equipped with backflow prevention devices to prevent contamination of these lines during emergencies. Therefore, no impact to water supplies is expected. The depth to groundwater at TA-50 is approximately 1,000 ft (Purtymun and Johansen, 1974). Geologic units underlying TA-54 (located 4 miles east of TA-50) include layers of unsaturated volcanic tuff and ash, the moisture content of which ranges from 0.2 to 2.0 percent by weight (IT Corporation, 1987).

G.2.4.4 Mitigating Effects of Power Outages [20.4.1 NMAC, Subpart IX, 270.14(b)(8)]

Electrical power is supplied to TA-50-69 by a 13.4-kilovolt overhead distribution line through an underground conduit to an on-site substation that provides distribution to the building. Supplied power is used to operate continuous air monitors (CAMs) and other electrical equipment in the buildings. Additionally, an uninterruptible power source has been installed to operate the CAMs in the event of a power outage. In the event of a power failure, operations would cease and personnel would exit the affected building. Operations at the CSUs will be discontinued temporarily if electrical power is not restored quickly. A power failure or equipment failure would not affect containment within the TA-50 CSUs.

G.2.4.5 Preventing Undue Exposure [20.4.1 NMAC, Subpart V, 264.32]

To prevent undue exposure of personnel to hazardous or mixed waste, personal protective equipment appropriate for the waste being handled is worn by all on-site personnel at TA-50 involved in waste management activities at any of the waste management units. Workers

involved in waste handling at TA-50 are required to wear protective work uniforms and steel-toed /composite-toed shoes, as appropriate. Hard hats and gloves may also be worn while equipment is being operated and when containers are being loaded or unloaded.

G.2.4.6 Air Emission Standards [20.4.1 NMAC, Subpart V, 264.31 and 264.179]

Releases to the atmosphere are not anticipated from any of the TA-50 CSUs. Containers are kept closed during handling and storage except when, upon inspection, it is determined that containers need to be overpacked or the contents repackaged in new containers or when it is necessary to add or remove waste. Inspections are conducted to ensure the integrity of all stored containers. In the event of an unexpected release, all personnel working within or near the area would be notified immediately to evacuate.

G.2.5 Ignitable, Reactive, or Incompatible Waste [20.4.1 NMAC, Subpart IX, 270.14(b)(9) and 270.15(c) and (d); and 20.4.1 NMAC, Subpart V, 264.17, 264.176, and 264.177]

Special requirements for ignitable, reactive, or incompatible waste at the TA-50 CSUs are presented in Permit Part 2, Section 2.8. This information is provided to meet the requirements of 20.4.1 NMAC, Subpart V, 264.17(a), 264.176, and 264.177(a)(b)(c); and 20.4.1 NMAC, Subpart IX, 270.14(b)(9) and 270.15(d) [6-14-00].

G.2.6 Air Emission Standards for Containers [20.4.1 NMAC, Subpart V, Part 264, Subpart CC]

This section addresses potential applicability of 20.4.1 NMAC, Subpart V, Part 264, Subpart CC [6-14-00], “Air Emission Standards for Tanks, Surface Impoundments, and Containers” to containers at TA-50, based on applicability criteria specified in 20.4.1 NMAC, Subpart V, 264.1080 [6-14-00]. Subpart CC standards require that the containers be covered or controlled so that there are no detectable emissions. The standards are met by placement of waste in DOT-compliant containers and are not applicable to containers of radioactive mixed waste. The standards are also not applicable to containers of hazardous waste with less than 500 parts per million by weight (ppmw) volatile organics, containers that have received waste prior to the effective date of regulation (December 6, 1996), or containers of less than 0.1 cubic meters (m^3) (approximately 26 gallon) capacity.

Containers of less than 0.46 m^3 (approximately 119 gallon) capacity and that meet DOT specifications under the Code of Federal Regulations, Title 49, Part 178, will be kept closed during storage pursuant to 20.4.1 NMAC, Subpart V, 264.1086(b)(1)(ii) [6-14-00]. Containers undergoing waste characterization activities may be open for access for the purposes described

in 20.4.1 NMAC, Subpart V, 264.1086(c) [6-14-00]. Containers of greater than 0.46 m^3 capacity that contain waste with greater than 500 ppmw volatile organics or those that are greater than 0.1 m^3 capacity, do not meet U.S. Department of Energy specifications, and contain wastes of greater than 500 ppmw volatile organics will be subject to a visual inspection and monitoring program as required by 20.4.1 NMAC, Subpart V, 264.1088(b) [6-14-00].

G.3 REFERENCES

LANL, 2002, "Los Alamos National Laboratory Technical Area 50 Part B Permit Renewal Application", Revision 3.0, August 2002, LA-UR-02-4739, Los Alamos, New Mexico, Los Alamos National Laboratory.

LANL, 1998, "Los Alamos National Laboratory General Part B Permit Application," Los Alamos, New Mexico, Los Alamos National Laboratory.

LANL, 1993, "Storm Water Pollution Prevention Plan for Technical Area 50 Waste Treatment Facilities," Los Alamos, New Mexico, Los Alamos National Laboratory.

IT Corporation, 1987, "Hydrogeologic Assessment of Technical Area 54, Areas G and L," Los Alamos National Laboratory, Docket No. NMHWA 001007, IT Corporation, Albuquerque, New Mexico.

Purtymun and Johansen, 1974, "General Geohydrology of the Pajarito Plateau," New Mexico Geological Society Guidebook, 25th Field Conference, Central Northern New Mexico.

TA-54

CONTAINER MANAGEMENT

TA-54

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LIST OF ABBREVIATIONS/ACRONYMS

20.4.1 NMAC	New Mexico Administrative Code, Title 20, Chapter 4, Part 1
CFR	Code of Federal Regulations
CMP	corrugated metal pipe
CSU	container storage unit
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
DVRS	Decontamination and Volume Reduction System
FRP	fiberglass-reinforced plywood
ft	feet/foot
ft^2	square feet/foot
HDPE	high-density polyethylene
HEPA	high-efficiency particulate air
LACFD	Los Alamos County Fire Department
LANL	Los Alamos National Laboratory
m^3	cubic meters
MLLW	mixed low-level waste
MSDS	Material Safety Data Sheet
MTRUW	mixed transuranic waste
PPE	personal protective equipment
ppmw	parts per million by weight
~~PTLA~~	~~Protection Technology Los Alamos~~
PVC	polyvinyl chloride
RCRA	Resource Conservation and Recovery Act
TA	technical area
TRU	transuranic
UV	ultraviolet

TA-54
CONTAINER MANAGEMENT

The information in this Attachment addresses the applicable container storage requirements of the New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20.4.1 NMAC), § 270.15, and 20.4.1 NMAC , Subpart V, Part 264, Subpart I, revised June 14, 2000 [6-14-00]. This Attachment provides an overview of current facility operations and waste management practices at Technical Area (TA) 54 at Los Alamos National Laboratory (LANL) and complements ~~the information provided in Section~~ Parts 3 and 14~~2.0~~ of thise Permit~~TA-54 Part B permit renewal application (LANL, 2003)~~. It includes detailed descriptions of the TA-54 container storage units (CSU) and the current waste management practices associated with them..

G.1 GENERAL FACILITY OPERATIONS AND WASTE MANAGEMENT PRACTICES [20.4.1 NMAC, Subpart V, Part 264, Subpart I]

TA-54 consists of 130 acres atop Mesita del Buey and is used for storage of hazardous and mixed waste generated throughout LANL. A principal mission of TA-54 is to manage LANL waste safely and efficiently, consistent with federal and state regulations and U.S. Department of Energy (DOE) requirements. TA-54 has three separate areas where hazardous and/or mixed waste is stored; the three areas include Area L, Area G, and TA-54 West (see Figure G-1 in LANL, 2003). There ~~are two~~are~~is~~ one CSU~~s~~ at Area L, nine CSUs at Area G, and two CSUs at TA-54 West. ~~These CSUs are described in below..~~

The following provides an overview of current facility operations and waste management practices that are applicable to the CSUs at TA-54. This overview includes a discussion of container handling and inspection; security and access control; preparedness and prevention; hazards prevention; special requirements for ignitable, reactive, or incompatible waste; and air emission standards for containers. Similar information specific to the Area L, Area G, and TA-54 West CSUs is provided in Sections G.2, G.3, and G.4 of this Attachment Section. This information is submitted to fulfill the requirements of 20.4.1 NMAC, Subpart V, Part 264, Subpart I [6-14-00]. Specific waste management practices and procedures detailed herein are subject to change.

G.1.1 Container Handling and Inspection [20.4.1 NMAC §§ 264.171, 264.173, and 264.174

Handling and inspection requirements for containers stored within the TA-54 CSUs are presented in Part 3 and Attachment E of this Permit. Handling and inspection requirements for containers stored within the TA-54 CSUs are presented in Permit Part 3 and Attachment E of this Permit~~and Sections 2.5 and 2.7, respectively, of the TA-54 Part B permit renewal application (LANL, 2003)~~. This information is provided to meet the requirements of 20.4.1 NMAC §§ 264.171, 264.173, and 264.174 [6-14-00].

G.1.2 Security and Access Control [20.4.1 NMAC §§ 270.14(b)(4) and 270.14(b)(19)(viii); 20.4.1 NMAC § 264.14]

The CSUs at TA-54 are provided security by both their locations on top of Mesita del Buey and by 8-foot (ft) industrial chain-link fences topped by razor wire or barbed wire. Additional security is provided by a system of facility access controls to ensure that only authorized personnel are granted access. These access controls also ensure that all facility personnel can be identified and located in an emergency.

Depending on national security conditions, a guard station will be manned west of the TA-54 timed vehicle-access control gate. ~~During intervals of high national security, it is currently planned that g~~Guard stations ~~will also~~ control public access on Pajarito Road east and west of TA-54. Therefore, only properly identified LANL and DOE employees or individuals under their escort will have access to TA-54~~ during those times~~.

~~During low national security conditions, any access to the TA-54 administrative area for Areas L and G is limited by a timed vehicle-access control gate on the entrance road to TA-54.~~ A vehicle-access~~This~~ gate is open during normal working hours from 6:00 a.m. to 6:30 p.m., Monday through Friday (except holidays). Gate hours are subject to change. Access to TA-54 West is by a manually operated gate on the west side of the facility. The gate is also open during normal working hours. Access to any part of TA-54 before or after normal working hours or on weekends requires approval of the appropriate Group Leader or Facility Manager at TA-54. TA-54 is patrolled by ~~Protection Technology Los Alamos (PTLA)~~ security personnel during non-operational hours to ensure that the gates are locked and that unauthorized entry has not occurred.

Anyone entering the fenced Area L and Area G waste management areas from the TA-54 administrative area must be “badged in” ~~via access control at TA-54-245~~ before proceeding. Badging in is the process of identifying the person, assessing his/her security and training status

using DOE security badges, and determining the need for an escort. Authorized personnel may enter the fenced portions of Areas L and G only after negotiating additional access controls such as the operations center gate, ~~in the form of~~ walk-through turnstiles, and motorized vehicle gates. Each turnstile and vehicle gate is equipped with a badge reader to ensure authorized access only.

Resident personnel are required to badge in upon arrival and prior to leaving TA-54, Areas L and G, and TA-54 West. Nonresident personnel and visitors are required to badge or sign in and out at an access control point at the facility operations center. Depending on their level of training, nonresident personnel may be required to be escorted in order to access TA-54, Areas L and G, and TA-54 West. Access to the Area L, Area G, and TA-54 West CSUs requires additional controls. These controls are described in Sections G.2.1, G.3.1, and G.4.1 of this Attachment Section, respectively.

G.1.3 Preparedness and Prevention [20.4.1 NMAC, Subpart V, Part 264, Subpart C; and 20.4.1 NMAC § 270.14(b)(8

The following presents information on the waste management techniques used at TA-54 to comply with the preparedness and prevention requirements of 20.4.1 NMAC, Subpart V, Part 264, Subpart C [6-14-00]. This includes a discussion of the emergency equipment required at the facility, testing and maintenance of this equipment, personnel access to communications or alarm systems, aisle space and storage configuration, and support agreements with outside agencies. Each CSU at TA-54 has been or will be designed, constructed, maintained, and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment, in accordance with 20.4.1 NMAC § 264.31.

G.1.3.1 Required Equipment [20.4.1 NMAC § 264.32

Emergency equipment is located throughout TA-54 and includes internal communications, alarm systems, fire alarms, spill kits, and decontamination equipment. Detailed information on the required emergency and safety equipment located at the Area L, Area G, and TA-54 West CSUs is provided in Sections G.2.2, G.3.2 and G.4.2 of this Attachment Section, respectively. For additional information see equipment listings in Attachment D (Contingency Plan)~~Attachment E~~.

G.1.3.2 Testing and Maintenance of Equipment [20.4.1 NMAC § 264.33]

The communication, alarm system, fire protection, spill control, and decontamination equipment located within TA-54 is inspected and/or tested according to the inspection schedule detailed in Attachment E (*Inspection Plan*). Maintenance, repair, and replacement of emergency equipment are performed, as needed.

G.1.3.3 Access to Communications or Alarm System [20.4.1 NMAC § 264.34

All personnel involved in waste management activities at TA-54 have immediate access to internal alarms or emergency communication devices, either directly or through visual or voice contact with another individual. These devices include fire alarms, evacuation alarms, paging telephones, radios, alphanumeric pagers and cellular telephones. The nature and locations of these devices are specific to the Area L, Area G, and TA-54 West CSUs. Detailed information for Area L, Area G, and TA-54 West is provided in Sections G.2.2, G.3.2, and G.4.2 of this Attachment Section, respectively.

G.1.3.4 Aisle Space and Storage Configuration [20.4.1 NMAC § 264.35

Information on aisle space and storage configurations for the TA-54 CSUs is presented in Part 3 (Container Storage). This information is provided to meet the requirements of 20.4.1 NMAC § 264.35 [6-14-00].

G.1.3.5 Support Agreements with Outside Agencies [20.4.1 NMAC § 264.37(a

DOE maintains support agreements and contracts with outside agencies for emergency response assistance. Information regarding these contracts and support agreements is provided in Attachment D (*Contingency Plan*).

G.1.4 Hazards Prevention [20.4.1 NMAC, Subpart V, Part 264, Subpart C; 20.4.1 NMAC § 270.14(b)(8)]

The following discusses the general procedures, equipment, and structures that are currently used at TA-54 to prevent hazards. This includes preventing hazards during unloading of waste containers, preventing run-on and runoff, preventing contamination of the water supply, mitigating the effects of power outages, preventing undue exposure to personnel, and preventing releases to the atmosphere.

G.1.4.1 Preventing Hazards in Unloading [20.4.1 NMAC § 270.14(b)(8)(i)]

Waste containers are transported to the Area L, Area G, and TA-54 West CSUs by flatbed trucks, closed-box trucks, or trailers. The CSUs have design features that promote safe unloading and handling of waste containers from these trucks and trailers. Ramps are typically

located at the vehicle entrances to the dome structures at the Area L and Area G CSUs. Shed 31 at Area L and Shed 8 at Area G have sloped entryways for container-handling equipment. The storage domes have roll-up or roll-away vehicle access doors. The loading dock at TA-54 West allows access from the transport vehicles to the loading dock platform. These design features facilitate safe handling of containers in and out of the CSUs.

All waste containers at the TA-54 CSUs are handled in a manner that will not cause them to rupture or leak, as required in 20.4.1 NMAC § 264.173(b) [6-14-00]. Most containers are handled with forklifts (using drum grapplers, when appropriate) and are placed directly in the appropriate CSU. For larger containers, personnel can use a boom or, at TA-54 West and in portions of Area L, a bridge crane or mobile crane, respectively. At TA-54-412, waste containers (FRP crates, drums, and large boxes) are generally handled with forklifts, overhead cranes, and frictionless air pallets. Smaller containers are generally handled manually or with drum dollies. The use of proper handling equipment, appropriate to a container's size and weight, helps to prevent hazards while moving containers (e.g., when loading and unloading containers).

G.1.4.2 Preventing Run-on and Runoff [20.4.1 NMAC § 270.14(b)(8)(ii)]

At TA-54, controlling run-on and runoff at the locations where waste management operations regularly occur is accomplished by appropriate contouring of surface areas and the use of control structures such as drainage channels, berms, and culverts. Canopies, dome structures, and other buildings are used to eliminate or minimize contact between run-on and waste containers. In addition, all stored waste containers are elevated or are placed in areas with sloped floors and sumps to provide protection from liquids that could be introduced through fire-suppression activities. Existing operational controls include inspecting run-on and runoff controls in accordance with Attachment E (Inspection Plan) and maintaining the structural run-on/runoff controls, as necessary. Run-on/runoff management methods specific to the Area L, Area G, and TA-54 West CSUs are discussed below.~~Run-on and runoff control methods for the TA-54 CSUs are presented in Section 2.10 of the permit renewal application (LANL, 2003).~~ This information is provided to meet the requirements of 20.4.1 NMAC § 270.14(b)(8)(ii) [6-14-00].

G.1.4.2.1 Area L

The Area L CSU relies on structural and operational controls that are designed to divert storm water to a single outfall. They include asphaltic-concrete channels, a 12-inch corrugated pipe

storm drain to convey storm water to a single outfall at the northeast corner of Area L, and a contoured paved surface to direct storm water to the conveyances. Snow removal is also performed to minimize run-on and runoff.

G.1.4.2.2 Area G

In certain drainage areas at Area G, structures have been provided to efficiently channel storm water to the ephemeral streams draining the mesa. These structures include asphaltic-concrete and concrete drainage channels, a weir, riprap-lined channels, a retention dam, berms, and culverts. Roads and drive pads are configured, by grading and paving, to carry storm water away from the areas of active vehicular and loading operations. Silt fences and other erosion control structures are established throughout the drainage areas in locations prone to erosion or affected by heavy runoff during storm events.

G.1.4.2.3 TA-54 West

The foundation at the RANT Facility (TA-54-38) is above grade to prevent run-on of storm water. Storm drains and trenches are included in the building design to collect any precipitation or snowmelt that may enter the facility through the loading bays. The Outdoor CSU storage pad is sloped away from the RANT Facility building towards the edges of the pad, allowing storm water to flow to the edges of the pad. All containers of waste stored at the TA-54 West CSUs are located in areas with sloped floors and sumps or are elevated by design, on dollies, or on pallets. This prevents the containers from coming into contact with liquids. All waste-containing drums and SWBs on the Outdoor CSU storage pad are covered by a canopy or tarp to prevent contact with precipitation. Loaded TRUPACT-II containers may also be stored on the Outdoor CSU storage pad until shipment to WIPP occurs. TRUPACT-II containers are leak-resistant containers with an acceptable leak rate of 2.6 x 10-7 cubic centimeters of helium per second, which prevents the containerized waste within the TRUPACT-II containers from contact with precipitation. Positive surface drainage throughout TA-54 West directs potential run-on away from the TA-54 West CSUs. A drainage swale and curbing direct storm water runoff toward an outfall on the northeast side of the storage pad.

G.1.4.3 Preventing Water Supply Contamination [20.4.1 NMAC § 270.14(b)(8)(iii)]

It is not anticipated that there will be any impact to groundwater or other water supplies as a result of routine waste-handling operations at TA-54 because engineering and operational controls ensure that run-on and runoff are minimized. Containers are stored inside structures or

with second containment, as necessary. Water supply lines are under pressure and are equipped with backflow prevention devices. Therefore, no impact to water supplies as a result of storage at the TA-54 CSUs is expected.

The depth to groundwater is approximately 890 ft (Ball et. al., 2002, p. 30), and no perched aquifers have been identified beneath Mesita del Buey (LANL, 1998, p. 4-59). In 1985, test wells were installed in the canyons north and south of TA-54 to determine if perched water exists within canyon alluvium, to determine if perched water extends beneath Mesita del Buey, and to sample/monitor perched water, if present. Three test wells were installed in a tributary to Cañada del Buey; they include CDBO-1, CDBO-2, and CDBO-3. Test well CDBO-4 was installed further to the east in Cañada del Buey (see Figures 2-1 and 2-3 in LANL, 2003). All four wells were dry; however, they were completed as observation wells to monitor the alluvium for possible water in the future (LANL, 1995, pp. 116 and 127-128).

Three test wells were installed in Pajarito Canyon; they are PCO-1, PCO-2, and PCO-3 (LANL, 1995, pp. 116 and 129) (see Figures 2-1 and 2-3 in LANL, 2003). These three wells are sampled annually for radionuclides, metals, and general inorganics; they are sampled triennially for organics. Sampling results are compiled annually in environmental surveillance reports and submitted to the New Mexico Environment Department. To ensure that the alluvial aquifer in Pajarito Canyon did not extend northward beneath Mesita del Buey, four test holes were drilled in the canyon floor north of the intermittent stream channel. These four test holes, designated PCM-1, PCM-2, PCM-3, and PCM-4, were dry. They were completed for use as moisture-access holes (LANL, 1995, pp. 115 and 130). It was concluded that perched water in Pajarito Canyon is confined to the alluvium in the stream channel and does not extend to the flank of the canyon (LANL, 1995, p. 113).

Five observation wells were installed in Cañada del Buey, mostly up-gradient from Area L, as part of a 1992 investigation for a proposed sanitary wastewater treatment plant. These wells, installed to study the effect of effluent release on the environment in the canyon, are CDBO-5, CDBO-6, CDBO-7, CDBO-8 and CDBO-9. In addition, two moisture-access holes (CDBM-1 and CDBM-2) were drilled north of Area L in 1992. Perched water was encountered in the canyon alluvium at wells CDBO-6 and CDBO-7. It was determined that the perched water at these locations is likely the result of operational discharges from well PM-4 (LANL, 1995, p. 114).

Regional well R-22, located on Mesita del Buey just east of Area G, was drilled to a total depth of 1,489 ft in 2000. Two potential perched zones and one regional zone of saturation were originally predicted at well R-22. The two zones that could potentially support perched water were predicted at a depth of 148 ft in the Cerros del Rio basalt and at a depth of 487 ft in the Puye Formation; the regional water table was anticipated to be at a depth of 922 ft in the Puye Formation. No water was encountered until the drillers first noted water at a depth of approximately 890 to 900 ft. The water is believed to be associated with the regional zone of saturation because the regional water table was projected to be at a similar depth, no obvious perching horizon was encountered, and saturation continued from 900 ft to the total depth drilled. Regional well R-21, located in Cañada del Buey just north of Mesita del Buey, was drilled in 2002. A report describing this well will be provided to the NMED upon completion.

G.1.4.4 Mitigating Effects of Power Outages [20.4.1 NMAC § 270.14(b)(8)(iv)

Electrical power is supplied to the structures at TA-54 to operate evacuation alarms, lighting, and various types of monitoring equipment. Battery backup systems (uninterruptible power systems) are provided at Areas G and L for the emergency evacuation alarm, which will continue to operate for eight hours. TA-54-412 has a backup generator that will provide electricity to the Decontamination and Volume Reduction System (DVRS) operations and its monitoring equipment to allow workers to safely cease operations and exit the building. TA-54-33 and TA-54-412 at Area G and TA-54-39 and TA-54-215 at Area L have battery-powered emergency lighting. Operations in each CSU are discontinued if the electrical power is not restored quickly. Specific procedures and contingencies have been developed to handle power outages at the Area L, Area G, and TA-54 West CSUs. These include the procedure to exit domes when electricity goes out. When power is restored, performance tests on monitoring equipment are conducted to ensure they are operating properly prior to allowing any workers to return to the domes. Based on the TA-54 procedures, the loss of electricity will not affect secondary containment or significantly affect health and safety issues.

TA-54 has a Maintenance Implementation Plan that addresses maintenance implementation for equipment associated with all facility operations. The plan provides the basis for planning, scheduling, and coordinating preventive and/or corrective maintenance to keep equipment associated with all facility operations in proper working order.

G.1.4.5 Preventing Undue Exposure [20.4.1 NMAC § 270.14(b)(8)(v)

Personnel at the TA-54 CSUs are required to use appropriate personal protective equipment (PPE) to protect themselves from the hazards found in the workplace under normal conditions. Use of PPE protects workers from direct contact with and inhalation or ingestion of hazardous materials. At TA-54, PPE is used routinely during waste-handling operations and when responding to unusual hazardous situations. The different levels of PPE are defined by the Occupational Safety and Health Administration as follows:

- *Level D*: Coveralls; safety boots; safety glasses or goggles; hard hat; and appropriate gloves
- *Level C*: Full-face, air-purifying respirator with appropriate cartridges for the chemicals or hazards present; chemical-resistant suits; chemical-resistant safety boots or booties; and inner and outer gloves
- *Level B*: All Level C equipment plus self-contained breathing apparatus in place of a Level C full-face respirator
- *Level A*: All Level B equipment, plus a fully-encapsulating chemical-resistant suit.

Most waste-handling operations at the TA-54 CSUs require that personnel handling wastes or working in the CSUs wear modified Level D PPE, depending on the associated work hazards identified in job-specific hazard control plans. Modified Level D may include any item in Level D. There are instances where an increased level of PPE is required, such as during an emergency or unusual hazardous situation. If a situation arises during an emergency and an increased level of PPE is required, the PPE will be compatible with the wastes present. All personnel that use PPE are trained and qualified to use the equipment properly.

All personnel involved in waste-handling operations in the TA-54 CSUs are required to have training appropriate for their work. Training requirements are presented in Attachment D of this permit renewal application and in Appendix D of the LANL General Part B. Personnel are also required to review job hazards prior to performing waste-handling activities. Sampling plans, hazard control plans (which address monitoring equipment), and work authorizations are required, in accordance with LANL safety procedures. Personal monitoring equipment is established using the job hazard review process. Training requirements are presented in Attachment F of this Permit.~~Together, the required training, plans, and work authorizations help to prevent undue exposure to personnel.~~

G.1.4.6 Preventing Releases to the Atmosphere [20.4.1 NMAC § 270.14(b)(8)(vi)]

Releases to the atmosphere are limited at the TA-54 CSUs because containers are kept closed during storage. In routine hazardous waste and mixed low-level waste (MLLW) operations, the only exceptions to this practice are when, upon inspection, it is determined that a container currently in storage needs to be overpacked or repackaged in a new container, or during waste characterization or verification activities.

For MLLW and mixed transuranic waste (MTRUW), operations at TA-54-412 are contained in a pre-engineered metal structure to provide containment. An external secondary confinement structure surrounds the internal primary confinement structure. Both primary and secondary confinement structures are equipped with an air filtration system that includes a high-efficiency particulate air (HEPA) ventilation system to prevent the release of particulates to the environment.

The transuranic waste characterization facilities on Pad 10 (former Pads 2 and 4) ~~will~~ may include glove boxes, ~~and~~ hoods, real-time radiography, non-destructive assay equipment, and heated storage for managing mixed waste. The transuranic waste characterization facilities transportainers will provide external confinement for those operations. ~~The equipment and the transportainers will have HEPA filtration systems to contain potential releases.~~

MTRUW containers are vented with one or more filters to allow any gases that are generated by radiolytic and microbial processes within a waste container to escape, thereby preventing over pressurization within the container. The HEPA-grade vent filters prevent the escape of any radioactive particulates.

G.1.5 Special Requirements for Ignitable, Reactive, or Incompatible Waste [20.4.1 NMAC §§ 264.17(a), 264.176, and 264.177(a)(b) and (c); 20.4.1 NMAC § 270.14(b)(9)]

Special requirements for ignitable, reactive, or incompatible waste at the TA-54 CSUs are presented in Permit Part 2, Section 2.8. This information is provided to meet the requirements of 20.4.1 NMAC §§ 264.17(a), 264.176, and 264.177(a)(b) and (c); and 20.4.1 NMAC §§ 270.14(b)(9) and 270.15(d) [6-14-00].

G.1.6 Air Emission Standards for Containers [40 CFR, Part 264, Subpart CC]

The hazardous wastes stored in containers at TA-54 may be subject to 20.4.1.500 NMAC (incorporating the Code of Federal Regulations [CFR], Title 40, Part 264, Subpart CC, “Air Emission Standards for Tanks, Surface Impoundments, and Containers”) based on the applicability criteria specified in 40 CFR § 264.1080. Subpart CC standards for containers, as

currently set forth by the U.S. Environmental Protection Agency, require that containers of hazardous waste be covered so that there are no detectable emissions of volatile organic compounds to the air. Inspection and monitoring requirements are also specified.

As indicated in 40 CFR § 264.1080(b)(6), these standards are not currently applicable to containers that are used solely for management of radioactive mixed waste in accordance with all regulations under the authority of the Atomic Energy Act and the Nuclear Waste Policy Act. The standards are also not applicable to containers of hazardous waste with less than 500 parts per million by weight (ppmw) volatile organics, containers of less than 0.1 cubic meters (m^3) (approximately 26 gallons) capacity, or that have received waste prior to the effective date of the regulation (December 6, 1996). The following management standards apply for hazardous wastes managed at LANL that do not meet any of the exemptions listed in 40 CFR §264.1080(b).

LANL requires that Subpart CC requirements be evaluated by the generator as part of the waste characterization process. Generator information is used to determine whether the concentration of volatile organics in a waste stream at the point of generation is less than 500 ppmw, or is equal to or greater than 500 ppmw, which is the threshold concentration for Subpart CC requirements. The generator documents this determination for that waste stream. In the event that this information is not available, the waste will be characterized in accordance with Attachment C (*Waste Analysis Plan*) prior to being received by TA-54. Any hazardous waste that is newly-generated through the treatment or re-characterization of mixed waste at TA-54 will be characterized for the volatile organic content also in accordance with Attachment C.

Three levels of air emission controls based on container design capacity are established in 40 CFR § 264.1086(b). TA-54 hazardous waste storage procedures require Level 1 controls based upon container design capacities. Containers of greater than 0.1 m^3 and less than 0.46 m^3 (approximately 119 gallons) capacity and that meet U.S. Department of Transportation (DOT) specifications under 49 CFR, Part 178, are kept closed during storage pursuant to 40 CFR § 264.1086(c)(3). Containers undergoing waste characterization activities may be opened for access for the purposes described in 40 CFR § 264.1086(c)(3). As required by 40 CFR § 264.1086(c)(4), these containers are subject to a visual inspection and monitoring program. On or before acceptance of the waste container at TA-54, the container is inspected to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the

cover and closure devices are secured in the closed position, in accordance with 40 CFR § 264.1086(c)(1)(ii). This inspection is documented in uniform hazardous waste manifests. Pursuant to the Inspection Plan in Attachment E, containers are inspected weekly at TA-54 to ensure that the containers remain closed during storage, thereby exceeding the requirements of 40 CFR § 264.1086(c)(4)(ii).

G.2 AREA L CONTAINER STORAGE UNITS [20.4.1 NMAC, Subpart V, Part 264, Subpart I]

The following provides specific information on current facility operations and waste management practices at the ~~two~~ Area L CSU~~s~~. This includes a discussion of security and access control, preparedness and prevention, hazards prevention, and design information for the Area L CSU~~s~~.

This information is submitted to fulfill the requirements of 20.4.1 NMAC, Subpart V, Part 264, Subpart I [6-14-00]. Detailed information is subject to change.

G.2.1 Security and Access Control [20.4.1 NMAC §§ 270.14(b)(4) and 270(b)(19)(viii); 20.4.1 NMAC § 264.14]

Security at the Area L CSU~~s~~ is maintained by both artificial and natural barriers. These barriers prevent unauthorized entry of persons or livestock into Area L and satisfy the requirements of 20.4.1 NMAC §§ 264.14(a) and 264.14(b)(2) [6-14-00]. An 8-ft-high chain-link security fence with razor or barbed wire at the top surrounds the entire perimeter of Area L. Bilingual (i.e., English and Spanish) warning signs are posted on the fence at 50- to 75-ft intervals and can be seen from any approach to this area. The legends on the signs indicate "Danger—Hazardous Waste Storage Area" and "Unauthorized ~~Persons~~ Personnel Keep Out." Existing signs with a legend other than “Danger-Unauthorized Personnel Keep Out” may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion, and that entry onto the active portion can be dangerous. The signs are legible from a distance of 25 ft. The security fence is inspected by on-site personnel and repairs are made, as necessary. An entry gate and station are located on Mesita del Buey Road at the west central portion of Area L. In accordance with 20.4.1 NMAC § 270.14(b)(19)(viii) [6-14-00], the locations of the security fence, entry gates, and entry stations are shown on Figure 2-5 (Permit Part 2). Cliffs on the north and south sides of Area L provide additional security as a natural barrier to discourage unauthorized entry. Access to the Area L CSU~~s~~ is controlled by a gate. Authorized resident personnel must badge in/out at the magnetic badge reader to enter or leave through the gate. Individuals who do not

have a DOE-issued badge must be escorted after signing the visitor's log located in the ~~administrative area's access control building~~TA-54 Operations Center. These procedures limit access to the Area L CSU~~s~~ and provide a means of tracking personnel on site, should there be an emergency or evacuation.

G.2.2 Preparedness and Prevention [20.4.1 NMAC, Subpart V, Part 264, Subpart C; and 20.4.1 NMAC § 270.14(b)(8)]

The following presents information on the emergency equipment available at the Area L CSU~~s~~ to comply with the preparedness and prevention requirements of 20.4.1 NMAC, Subpart V, Part 264, Subpart C [6-14-00]. This includes the approximate locations of fire extinguishers, shower/eyewash stations, spill kits, windsocks, and communication/alarm systems.

Required Equipment [20.4.1 NMAC § 264.32]

Area L is equipped with an audible alarm system to alert personnel of a fire or the need to evacuate the area. This alarm can be activated by pulling a fire alarm or by pushing the evacuation alarm button. These alarms are located throughout Area L and are connected to the Los Alamos County Fire Department (LACFD) through LANL's central alarm system at all times. In addition to the alarms, there are numerous telephones located in and around the structures within Area L. These telephones ensure that personnel can contact on-site and LANL emergency personnel at all times. Many of these telephones also serve as emergency paging phones so that information can be announced throughout the area. Windsocks are also located at strategic locations to indicate wind direction and strength.

Fire control equipment at Area L includes fire extinguishers (halon, water, carbon dioxide, and/or dry chemical), a dry-pipe sprinkler system, and dry chemical systems. The fire extinguishers are available at or near most structures within Area L for use by on-site personnel, depending on the size and fuel source of a fire. Dome 215 has an automatic dry-pipe sprinkler system that is heat activated in the event of a fire. Storage Sheds 68, 69, and 70 have dry chemical systems. Fire hydrants are located near TA-54-37 and the southeast corner of TA-54-62. The fire hydrants supply water at an adequate volume and pressure to satisfy the requirements of 20.4.1 NMAC § 264.32 [6-14-00].

Personal decontamination equipment at Area L includes emergency eyewash stations and showers. This equipment is for use by personnel in emergencies involving chemical and/or radiological materials. These stations are generally located near or inside structures where

waste is being handled. Emergency shower and eyewash stations are currently located at or near TA-54-39, TA-54-31, TA-54-215, TA-54-216, and TA-54-35. Waste characterization documentation and/or Material Safety Data Sheets (MSDS) are also available in the event of a chemical exposure.

There are several spill kits available at Area L to mitigate small containable spills. These kits typically contain sorbents, neutralizers, PPE, and other equipment essential for containment of small spills. Trained personnel use the spill kits only if they know what has been spilled and they are sure their actions will not put themselves or others at risk. In addition to the spill kits, shovels for cleanup are stored in TA-54-46. Oversized drums and sorbents are also stored at various locations throughout Area L. For larger spills or other unusual hazardous situations, a variety of equipment is available to emergency personnel. This equipment includes forklifts, self-propelled loaders, and other heavy equipment from Area G.

G.2.3 Hazards Prevention [20.4.1 NMAC, Subpart V, Part 264, Subpart C; 20.4.1 NMAC § 270.14(b)(8)]

The Area L CSUs are designed and operated to minimize the possibility of a fire, explosion, or any unplanned releases of hazardous wastes or hazardous waste constituents which could threaten human health or the environment. The following discusses the procedures, equipment, and structures that are used at Area L to mitigate the effects of power outages. Prevention of run-on and runoff at Area L is discussed in Section G.1.4.2 of the TA-54 Section of this Attachment~~Permit Part 2, Section 2.10.1~~.

Mitigating Effects of Power Outages [20.4.1 NMAC § 270.14(b)(8)(iv)]

Electrical power is supplied to Area L to operate evacuation alarms, lighting, and various types of monitoring equipment. Operations at Area L are discontinued if the electrical power is not restored quickly or if there is the possibility of an ignition. A power failure will not affect containment at the Area L CSUs.

G.2.4 Area L CSUs [20.4.1 NMAC § 270.15]

The following describes the ~~two~~ CSU~~s~~ at Area L (~~see~~ Figure 2-51~~ of LANL, 2003~~). The ~~two~~ CSU~~s~~ are the aboveground CSU within the fence~~ and the Storage Shafts CSU~~. The aboveground CSU within the fence is comprised of several storage structures (TA-54-215; TA-54-216; Storage Sheds 68, 69, and 70; Storage Shed 31; TA-54-32; TA-54-35; TA-54-36; TA-54-58; and TA-54-39) and the asphaltic concrete-covered area. General dimensions,

containment features, and materials of construction are discussed in this section to fulfill the requirements of 20.4.1 NMAC §§ 270.15(a)(1) and (2) [6-14-00].

G.2.4.1 Aboveground CSU within the Fence

The aboveground CSU within the fence stores containers of hazardous waste and MLLW in solid and liquid form. Liquid wastes are stored primarily in structures that are designed for secondary containment; however, secondary containment pallets are also used. Secondary containment pallets are typically constructed of polyethylene or metal painted with a chemical-resistant coating (see Supplement G-1 in LANL, 2003). Polyethylene secondary containment pallets used at TA-54 are generally 50 inches long by 50 inches wide by 17 inches deep, with a designed capacity of 83 gallons. Currently, two sizes of metal secondary containment pallets are used at TA-54. One is 52 inches long by 52 inches wide by 6.5 inches deep, with a designed capacity of 57 gallons; the other is 60 inches wide by 60 inches long by 6.5 inches deep, with a designed capacity of 77 gallons. The metal secondary containment pallets are coated with chemically-resistant urethane. The stressed- or tensioned-membrane fabric used on Storage Dome 215 and Canopy 216 at the aboveground CSU within the fence at Area L are similar. This fabric is coated with ultraviolet (UV)-stabilized plasticized polyvinyl chloride (PVC). It is fungus-resistant and certified flame-retardant (i.e., self-extinguishing). See Supplement G-1 (LANL, 2003), SPRUNG Instant Structures, for additional details.

<u>Storage Dome 215</u>

Storage Dome 215 (TA-54-215) is 60 ft wide, approximately 266 ft long, and 26 ft high (see Figure G-2 in LANL, 2003). It is an arch frame-supported stressed-membrane structure. The dome is of modular construction and uses light construction materials (i.e., aluminum framework with membrane/fabric covering). It is equipped with 14 personnel doors and two roll-up doors. The dome's pad is equipped with a 6-inch-high, 8-inch-wide concrete ring wall that surrounds the perimeter of the dome, and the dome is anchored to the concrete ring wall with anchor bolts. A ramp is located at the vehicle entrance to the dome and allows vehicles and container handling equipment to pass safely over the ring wall. The ring wall and the ramp prevent run-on into the dome. Any liquid that might accumulate within the storage dome (e.g., liquids resulting from fire-suppression activities) is contained within the ring-walled area. Liquid that may result from fire-suppression activities and that is in excess of the capacity inside the ring wall is collected in a double-walled holding tank connected to TA-54-215 by a double-walled pipe.

All waste containers at TA-54-215 are stored on pallets or are otherwise elevated (e.g., metal supports, wooden timbers) to prevent contact with accumulated liquids. All liquid wastes are stored on secondary containment pallets that have sufficient capacity to contain 10% of the volume of containers or the volume of the largest container stored on them, whichever is greater. Secondary containment pallets typically used at TA-54 have a capacity ranging from 57 to 83 gallons. Any accumulated liquids are removed and collected for characterization as described in Permit Part 3, Section 3.7.

Canopy 216

Canopy 216 (TA-54-216) is approximately 33 ft wide and 120 ft long (see Figure G-3 in LANL, 2003). This storage structure consists of a rigid aluminum frame that supports a tensioned membrane. A series of aluminum I-beam trusses, spanning the width of the structure, comprise its framework. The membrane is integrally connected to the frame to provide a fully-tensioned fit for the roof and one side of the structure. The membrane on the remaining three sides of the structure can be rolled down to provide further containment or protection from the weather. The canopy frame is anchored to a sloped asphaltic-concrete pad.

All waste containers at TA-54-216, including gas cylinders, are stored on pallets or are otherwise elevated (e.g., metal supports, wooden timbers, baskets) to prevent contact with accumulated liquids. All liquid wastes are stored on secondary containment pallets that have sufficient capacity to contain 10% of the volume of containers or the volume of the largest container stored on them, whichever is greater. Secondary containment pallets typically used at TA-54 have a capacity ranging from 57 to 83 gallons. Any accumulated liquids are removed and collected for characterization as described in Permit Part 3, Section 3.7

Storage Sheds 68, 69, and 70

Storage sheds 68, 69, and 70 are prefabricated sheds constructed of steel (see Supplement G-1 (LANL, 2003), Safety Storage Building, Model 22). Each shed measures approximately 23 ft long, 9 ft wide, and 8.5 ft high. Access to these storage sheds is obtained through one of three sets of double doors. Storage Shed 68 has three separate compartments, with one door leading to each compartment. Storage Sheds 69 and 70 each have two separate compartments, with one door leading to the smaller compartment and two doors leading to the larger compartment. The sheds are elevated by design, which prevents run-on.

Each shed is constructed with liquid-tight sumps to ensure containment of any potential leaks or spills and to prevent runoff. The floor of each shed consists of a metal grate that covers the sump areas. Containers are placed directly on the metal grates, which prevent contact with liquids that may have accumulated in the sumps. The interior of each shed and sump is coated with chemically-resistant epoxy paint. The designed sump storage capacity of each shed is 750 gallons, which exceeds the amount necessary to hold 10% of the total storage capacity of each shed (1,760 gallons; see Supplement 2-1 in LANL, 2003). Shed 68 has three separate compartments (see Figure G-4 in LANL, 2003), each having its own sump with individual capacities of 250 gallons. Sheds 69 and 70 have two separate compartments (see Figure G-4 in LANL, 2003), each having its own sump. One compartment consists of two thirds of the surface area (and capacity) of Sheds 69 and 70. The capacity of this compartment's sump is 500 gallons; the smaller compartment's sump capacity is 250 gallons. Additional engineering details and technical specifications for these sheds are provided in Supplement G-1 (LANL, 2003). Potential liquids that might accumulate within the sump areas (e.g., precipitation, liquids resulting from fire-suppression activities) are removed and collected for characterization, as described in Part 3, section 3.7.

Storage Shed 31

Storage Shed 31 is a prefabricated shed constructed of steel. It measures approximately 14 ft long, 13 ft wide, and 8 ft high (see Figure G-4 in LANL, 2003). The shed sits on a concrete foundation that has a raised edge and is surrounded by asphaltic concrete that is sloped away from the shed to prevent run-on.

The shed has three separate liquid-tight recessed sumps in the concrete foundation that are each covered with a steel grate (see Figure G-4 in LANL, 2003). Containers are stored on the steel grates, which prevent contact with liquids that may have accumulated in the sumps. The sumps and the concrete foundation are coated with chemically-resistant paint. Two of the sumps are approximately 6 ft long by 4 ft wide; the third sump is approximately 7 ft long by 6 ft wide. All three sumps are 5 inches deep. The total capacity of the three sumps is approximately 285 gallons, which exceeds the amount necessary to hold 10% of the total storage capacity of the shed (1,320 gallons; see Supplement 2-1 in LANL, 2003). Potential liquids that might accumulate within the sumps (e.g., precipitation, liquids resulting from fire-suppression activities) are removed and collected for characterization, as described in Permit Part 3, Section 3.7.

TA-54-32

TA-54-32 (see Figure G-5 in LANL, 2003) consists of a concrete pad that is 116.5 ft long by 15.5 ft wide. The structure is covered by a 117.75-ft-long by 25.75-ft-wide canopy. The canopy provides protection from the weather. The concrete pad is bermed by a 1-ft-wide, 6- to 8-inch-high concrete curb. This curbed area is divided into six separate containment cells to segregate wastes with different hazard classes. The curb prevents run-on of storm water.

Each containment cell consists of a recessed sump covered with a grate flooring on which containers are stored (see Figure G-6 in LANL, 2003); this prevents contact with liquids that may have accumulated in the sumps. The cells are separated by metal partitions above the flooring. The concrete sumps are treated with chemical-resistant epoxy filler-sealer and protective coating, providing an impervious seal to contain any potential leaks, spills, or accumulation of precipitation (see Supplement G-1 in LANL, 2003). Cells 1 and 6 are approximately 26.5 ft long by 13.5 ft wide by 1 ft deep, with a sump capacity of 2,675 gallons each. Cells 3 and 5 are approximately 16.8 ft long by 13.5 ft wide by 1 ft deep, with a sump capacity of 1,700 gallons each. Cells 2 and 4 are approximately 13.5 ft long by 11.2 ft wide by 1 ft deep, with a sump capacity of approximately 1,130 gallons each. These sump capacities exceed the amount necessary to hold 10% of the maximum storage capacity for TA-54-32 (see Supplement 2-1 in LANL, 2003). Potential liquids that might accumulate within the containment cells (e.g., precipitation, liquids resulting from fire-suppression activities) are removed and collected for characterization, as described in Part 3, section 3.7.

The pad will also contain a temporary modular containment structure moved from TA-54-36 when the permit modification approved in July 2007 is implemented. This modular structure provides waste containment and environmental protection for waste sampling and repackaging activities. The structure is constructed of 4-ft-wide, 8- or 4-ft-long, 22-gauge stainless-steel panels that interlock in a self-supporting structural steel framework. The structure is 28 ft wide by 28 ft long by 12 ft high. It is equipped with a 20-ft-long observation room that attaches to the main enclosure. The main enclosure has two personnel doors and an 8-ft-wide roll-up door. The floor in the main enclosure is the concrete pad covered with multiple layers of heavy duty plastic sheeting that are taped together and are extended approximately 1 ft up the sides of the structure.

TA-54-35

TA-54-35 (see Figure G-7 in LANL, 2003) consists of a concrete pad that measures 31.5 ft long by 31.5 ft wide. The area is covered by a 136-ft-long, 48-ft-wide canopy that provides protection from the weather. The pad has a 6-inch-high concrete berm that prevents run-on and runoff of liquids. The bermed area has an elevated ramp on one side to allow access for equipment to move waste containers. The ramp also helps to prevent run-on of precipitation and runoff of any accumulated liquids.

The bermed secondary containment area of the pad is approximately 29.5 ft long by 24.5 ft wide by 8 inches deep (see Figure G-8, LANL, 2003). Stored waste containers are elevated on pallets to prevent contact with any potential accumulated liquids. The concrete berms and the base of the concrete pad are treated with chemical-resistant epoxy filler-sealer and protective coating (see Supplement G-1 in LANL, 2003). This provides an impervious seal that will contain any leaks, spills, or accumulation of precipitation. The secondary containment capacity of the bermed area is approximately 3,570 gallons, which exceeds the amount necessary to hold 10% of the maximum storage capacity for TA-54-35 (15,840 gallons; see Supplement 2-1 in LANL, 2003). Potential liquids that might accumulate within the bermed area (e.g., precipitation, liquids resulting from fire-suppression activities) are removed and collected for characterization, as described in Part 3, section 3.7.

TA-54-36

TA-54-36 (see Figure G-7 in LANL, 2003) is a 33-ft-long by 31.5-ft-wide concrete pad. It is covered by a 136-ft-long, 48-ft-wide canopy that provides protection from the weather. The pad is surrounded by a 1-ft-wide berm that varies from 6 inches to 1 ft in height. The berm prevents run-on and runoff of liquids.

The bermed secondary containment area of the pad is approximately 30.5 ft long by 30 ft wide by 9 inches deep (see Figure G-8 in LANL, 2003). The berm and the base of the concrete pad are treated with chemical-resistant epoxy filler-sealer and protective coating (see Supplement G-1 in LANL, 2003). This provides an impervious seal that will contain any leaks, spills, or accumulation of precipitation. The secondary containment capacity of the bermed area is approximately 4,595 gallons, which exceeds the amount necessary to hold 10% of the maximum storage capacity for TA-54-36 (13,200 gallons; see Supplement 2-1 in LANL, 2003).

~~The pad also contains a Perma-Con® structure. The Perma-Con® is constructed of 4-ft-wide, 8- or 4-ft-long, 22-gauge stainless-steel panels that interlock in a self-supporting structural steel framework. The Perma-Con® system can be assembled into multiple configurations (see Supplement G-1 in LANL, 2003). The Perma-Con® is 28 ft wide by 28 ft long by 12 ft high. It is equipped with a 20-ft-long observation room that attaches to the main enclosure. The main enclosure has two personnel doors and an 8-ft-wide roll-up door. The floor in the main enclosure is the concrete pad covered with multiple layers of heavy duty plastic sheeting that are taped together and are extended approximately 1 ft up the sides of the Perma-Con®. The Perma-Con® has a tarp covering its roof to provide additional protection from the elements, thereby preventing the influx of precipitation, including melting snow.~~

All waste containers at TA-54-36 are stored on pallets or are otherwise elevated (e.g., metal supports, wooden timbers) to prevent contact with accumulated liquids. Potential liquids that might accumulate within the bermed area ~~or the Perma-Con®~~ (e.g., precipitation, liquids resulting from fire-suppression activities) are removed and collected for characterization, as described in Permit Part 3, Section 3.7.

TA-54-58

TA-54-58 (see Figure G-7 in LANL, 2003) measures 33 ft long by 31.5 ft wide. It is covered by a 136-ft-long, 48-ft-wide canopy that provides protection from the weather. The pad has a 1-ft-wide berm that varies from 6 inches to 1 ft in height. The berm prevents run-on and runoff of liquids. The bermed area has an elevated ramp on one side to allow access for equipment to move waste containers. The ramp also helps to prevent run-on of precipitation and runoff of any accumulated liquids.

The bermed secondary containment area of the pad is approximately 30.5 ft long by 25 ft wide by 6 inches deep (see Figure G-8 in LANL, 2003). Stored waste containers are elevated on pallets to prevent contact with any potential accumulated liquids. The berm and the base of the concrete pad are treated with chemical-resistant epoxy filler-sealer and protective coating (see Supplement G-1 in LANL, 2003). This provides an impervious seal that will contain any leaks, spills, or accumulation of precipitation. The secondary containment capacity of the bermed area is approximately 2,850 gallons, which exceeds the amount necessary to hold 10% of the maximum storage capacity for TA-54-58 (15,840 gallons; see Supplement 2-1 in LANL, 2003). Potential liquids that might accumulate within the bermed area (e.g., precipitation, liquids

resulting from fire-suppression activities) are removed and collected for characterization, as described in Permit Part 3, Section 3.7

TA-54-39 and Containment Pad

TA-54-39 measures 40 ft long by 40 ft wide (see Figure G-9 in LANL, 2003). It is a metal panel building set on a concrete foundation with a metal canopy attached to the south side of the building. The rectangular metal canopy measures 83 ft long by 46 ft wide.

There are two areas associated with TA-54-39 that provide secondary containment. These areas include Room 101, located inside the building, and a containment pad located at the south end of the building.

Room 101 (see Figure G-10 in LANL, 2003) inside TA-54-39 has a 6-inch-high concrete curb that surrounds the room. The curb and floor of this 878 square foot (ft2) room are treated with chemical-resistant epoxy filler-sealer and protective coating (see Supplement G-1 in LANL, 2003). This provides an impervious seal that will contain any potential leaks, spills, or accumulation of precipitation. The secondary containment capacity for Room 101 is approximately 3,280 gallons, which exceeds the amount necessary to hold 10% of the maximum storage capacity of the room (9,900 gallons; see Supplement 2-1 in LANL, 2003).

The containment pad at the south end of TA-54-39 consists of two sections. The pad is covered by a metal canopy, which provides protection from the weather. The eastern section of the containment pad is constructed of asphaltic concrete and measures 83 ft long by 23 ft wide. The western section of the containment pad is approximately 58 ft long by 16 ft wide (see Figure G-10 in LANL, 2003) and is surrounded by a 1-ft-high concrete curb, which prevents run-on and runoff of liquids. The concrete floor and curb are treated with chemical-resistant epoxy filler-sealer and protective coating (see Supplement G-1 in LANL, 2003). This provides an impervious seal that will contain any potential leaks, spills, or accumulation of precipitation. The curbed area slopes toward a sump for collection of any accumulated liquids. The secondary containment capacity for the western section of the TA-54-39 containment pad is approximately 7,120 gallons, which exceeds the amount necessary to hold 10% of the maximum storage capacity of this section of the containment pad (15,180 gallons; see Supplement 2-1 in LANL, 2003).

All waste containers stored at TA-54-39 are stored on pallets or are otherwise elevated (e.g., metal supports, wooden timbers) to prevent contact with accumulated liquids. Potential liquids

that might accumulate within Room 101 or within the western section of the containment pad (e.g., precipitation, liquids resulting from fire-suppression activities) are removed and collected for characterization, as described in Permit Part 3, Section 3.7.

Asphaltic Concrete-Covered Areas

The asphaltic concrete-covered areas consist of a 4- to 6-inch-thick asphaltic concrete over a base course. Asphaltic concrete-covered areas are typically sloped 1 to 1.5% to facilitate drainage (see Figure 2-1 in LANL, 2003). Some areas include a 6-inch-high, 8-inch-wide asphaltic-concrete berm to prevent run-on and runoff.

All waste containers on the asphaltic concrete-covered areas are stored on pallets or are otherwise elevated (e.g., metal supports, wooden timbers) to prevent contact with accumulated liquids. All liquid wastes are stored on secondary containment pallets that have sufficient capacity to contain 10% of the volume of containers or the volume of the largest container stored on them, whichever is greater. Secondary containment pallets typically used at TA-54 have a capacity ranging from 57 to 83 gallons. Any accumulated liquids are removed and collected for characterization, as described in Permit Part 3, Section 3.7.

~~G.2.4.2 Storage Shafts CSU~~

~~The Storage Shafts CSU is comprised of two retrievable storage shafts, Shafts 36 and 37. This CSU is located in the northwest corner of Area L. It stores highly radioactive mixed waste lead stringers that were used to hold targets in the particle beam operated at TA-53. Shaft 36 is constructed of 30-inch-diameter corrugated metal pipe (CMP); Shaft 37 is constructed of 48-inch-diameter CMP (see Figures G-11 and G-12 in LANL, 2003). Each shaft has a welded metal plate and a 1-ft-deep concrete plug at the base. Shaft 36 is 27.25 ft deep; Shaft 37 is 35.75 ft deep. The annular space in the ground surrounding the CMP is filled with crushed tuff to 48 inches from the surface and concrete to the surface. Each shaft has a steel cover. At the surface, the CMP is raised above a concrete pad, which extends from the edge of the pipe to prevent infiltration of precipitation. The shafts are also covered with one or two 4-ft-long, 4-ft-wide concrete blocks that rest on railroad ties for stability.~~

~~The Storage Shafts CSU stores only solid-form wastes and, as stated above, a concrete pad extends outward from each shaft to prevent infiltration of precipitation. Therefore, in accordance with 20.4.1 NMAC § 264.175(c)(1), a containment system for this CSU is not required. The CMP is compatible with the lead stringer wastes; thus, the requirements of 20.4.1 NMAC §~~

~~264.172 are met. The shafts are kept closed during storage and the wastes are not stored in a manner that may rupture the shafts or cause them to leak, which meets the requirements of 20.4.1 NMAC § 264.173. Weekly inspections are conducted at this CSU, as described in Section E.2 of the Inspection Plan in Appendix E. This satisfies the requirements of 20.4.1 NMAC § 264.174.~~

G.3 AREA G CONTAINER STORAGE UNITS [20.4.1 NMAC, Subpart V, Part 264, Subpart I]

The following provides specific information on current facility operations and waste management practices at the Area G CSUs. This includes a discussion of security and access control, preparedness and prevention, hazards prevention, and design information for the Area G CSUs. This information is submitted to fulfill the requirements of 20.4.1 NMAC, Subpart V, Part 264, Subpart I [6-14-00]. Detailed information is subject to change.

G.3.1 Security and Access Control [20.4.1 NMAC §§ 270.14(b)(4) and 270.14(b)(19)(viii); 20.4.1 NMAC § 264.14]

Security at the Area G CSUs is maintained with both artificial and natural barriers. These barriers prevent unauthorized entry of persons or livestock into Area G and satisfy the requirements of 20.4.1 NMAC §§ 264.14(a) and 264.14(b)(2) [6-14-00]. An 8-ft-high chain-link security fence with razor wire at the top surrounds the entire perimeter of Area G. Bilingual (i.e., English and Spanish) warning signs are posted on the fence at approximately 50- to 75-ft intervals and can be seen from any approach to this area. The legends on the signs indicate "Danger—Hazardous Waste Storage Area" and "Unauthorized Personnel~~s~~ Keep Out." Existing signs with a legend other than “Danger-Unauthorized Personnel Keep Out” may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion, and that entry onto the active portion can be dangerous. The signs are legible from a distance of 25 ft. Two entry gates are located on Mesita del Buey Road at the west end of Area G, and an entry station is located adjacent to the inner gate. TA-54 is patrolled by ~~PTLA~~ security personnel during non-operational hours to ensure that the gates are locked and that unauthorized entry has not occurred. The security fence is also inspected by

on-site personnel and repairs are made, as necessary. In accordance with 20.4.1 NMAC § 270.14(b)(19)(viii) [6-14-00], the locations of the security fence, entry gates, and entry stations are shown on Figure 2-4 (Permit Part 2). In addition to the fence and entry station, cliffs on the north and south sides outside of Area G provide natural barriers to discourage unauthorized entry.

Access to the Area G CSUs is controlled by a gate. Authorized resident personnel must badge in/out at the magnetic badge reader to enter or leave through the gate. Individuals who do not have a DOE-issued badge must be escorted after signing the visitor's log located in the administrative area's access control building. These procedures limit access to the Area G CSUs and provide a means of tracking personnel on site, should there be an emergency or evacuation.

G.3.2 Preparedness and Prevention [20.4.1 NMAC, Subpart V, Part 264, Subpart C; and 20.4.1 NMAC § 270.14(b)(8)]

The following describes the emergency equipment available at the Area G CSUs to comply with the preparedness and prevention requirements of 20.4.1 NMAC, Subpart V, Part 264, Subpart C [6-14-00]. This includes the approximate locations of fire extinguishers, shower/eyewash stations, spill kits, windsocks, and communication/alarm systems.

Required Equipment [20.4.1 NMAC § 264.32]

PPE and emergency equipment supplies are stored at various locations throughout Area G. All personnel who may be required to use PPE and emergency equipment are trained in its use. In addition, essential information for emergency personnel is located at the main gate to Area G in the event of an emergency after normal working hours, or if Area G personnel are unavailable Area G is equipped with an audible alarm system to alert personnel of a fire or the need to evacuate the area. The alarms can be activated by pulling a fire alarm or by pushing the evacuation alarm button. Fire alarms, evacuation alarms, and strobe lights are in place at strategic locations to alert personnel of emergency conditions. These alarms are located throughout Area G and are connected to the LACFD through LANL's central alarm system at all times. Personnel working in Area G also carry pagers, cellular telephones, or two-way radios. Emergency paging telephones are in place so that information can be announced throughout the area. This equipment ensures that personnel can contact on-site and LANL emergency personnel at all times. Windsocks are at strategic locations to indicate wind direction and

strength. There are different types of monitoring equipment located at the Area G CSUs that are used to qualitatively and/or quantitatively evaluate airborne contaminants. Alarms and strobe lights warn personnel when airborne concentrations exceed preset limits.

Fire control equipment is located throughout Area G. This equipment includes halon, water, and/or carbon dioxide fire extinguishers, dry-chemical fire suppression systems, fire blankets, and several fire hydrants. Trained personnel can use the fire extinguishers and fire blankets to

extinguish small, non-chemical fires. For larger fires, ~~PTLA~~ security personnel and the LACFD are alerted. The fire hydrants supply water at adequate volume and pressure to satisfy the requirements of 20.4.1 NMAC § 264.32 [6-14-00].

Eyewash stations, showers, and other first aid/decontamination equipment are maintained at various locations within Area G. They are for use by personnel in emergencies involving chemical and/or radiological materials. Waste characterization documentation and/or MSDSs are available in the event of a chemical exposure. First aid equipment can be used to treat injuries until trained medical personnel arrive at the scene.

Spill control equipment is maintained at various structures within Area G. Trained personnel use this equipment to mitigate small, containable spills if they know what has been spilled and are sure their actions will not put themselves or others at risk. PPE is also maintained at various structures within Area G and is available for use during routine and non-routine operations to protect personnel from exposure to chemical and radiological contaminants. Warning tapes and barricades are used to post areas and prevent unauthorized entry into restricted areas. Heavy equipment is also available at Area G to move heavy objects.

G.3.3 Hazards Prevention [20.4.1 NMAC, Subpart V, Part 264, Subpart C; 20.4.1 NMAC § 270.14(b)(8)]

In accordance with 20.4.1 NMAC, Subpart V, Part 264, Subpart C [6-14-00], the Area G CSUs have been or will be designed and operated to minimize the possibility of a fire, explosion, or any unplanned releases of hazardous wastes or hazardous waste constituents which could threaten human health or the environment. The following discusses the procedures, equipment, and structures used at Area G to mitigate the effects of power outages. Prevention of run-on and runoff at Area G is discussed in Section G.1.4.2 of this TA-54 Container Management Attachment~~Section 2.10.2 of the permit renewal application (LANL, 2003)~~.

Mitigating Effects of Power Outages [20.4.1 NMAC § 270.14(b)(8)(iv)]

Electrical power is supplied to the Area G CSUs to operate lighting and other electrical and monitoring equipment. Evacuation alarms located throughout Area G are equipped with a battery backup and will continue to operate for eight hours during a power failure. Operations in Area G are discontinued temporarily if electrical power is not restored quickly or if container handling equipment fails. However, neither a power nor an equipment failure would affect containment at the Area G CSUs.

Although not needed during daytime operations, emergency lighting for Area G consists of individual battery-pack halogen units located in TA-54-33 and TA-54-412. These lights are actuated by a loss of line voltage and are reset upon resumption of line voltage. A trickle charger keeps the self-contained battery pack at full charge and allows these lighting units a minimum of 30 minutes operability.

G.3.4 Area G CSUs [20.4.1 NMAC § 270.15]

The following describes the nine CSUs at Area G. The nine CSUs include the following:

- Storage Domes 229, 230, 231, and 232, and Pad 9;
- TA-54-412, Storage Dome 226, and Pad 1;
- Storage Dome 48 and Pad 3;
- Pad 10 (former Pads 2 and 4) and transuranic waste characterization facilities;
- Storage Domes 49 and 224; Storage Sheds 144, 145, 146, 177, 1027, 1028, 1030, and 1041; and Pads 5, 8, and 7;
- Storage Domes 153 and 283, and Pad 6;
- Storage Shed 8;
- TA-54-33, and;
- Storage Dome 375 and Pad 11.

General dimensions, containment features, and materials of construction are provided to fulfill the requirements of 20.4.1 NMAC §§ 270.15(a)(1) and (2) [6-14-00].

The CSUs at TA-54 are used to store containers of hazardous waste, MLLW, and MTRUW in solid and liquid form. Liquid wastes are stored primarily in structures that are designed for secondary containment; however, secondary containment pallets are also used. Secondary containment pallets are typically constructed of polyethylene or metal painted with a chemical-resistant coating (see Supplement G-1 in LANL, 2003). Polyethylene secondary containment pallets used at TA-54 are generally 50 inches long by 50 inches wide by 17 inches deep, with a designed capacity of 83 gallons. Two sizes of metal secondary containment pallets are typically used at TA-54. One is 52 inches long by 52 inches wide by 6.5 inches deep, with a designed capacity of 57 gallons; the other is 60 inches long by 60 inches wide by 6.5 inches deep, with a designed capacity of 77 gallons. The metal secondary containment pallets are coated with chemically-resistant urethane.

G.3.4.1 Storage Domes 229, 230, 231, and 232, and Pad 9 CSU

Storage Domes 229, 230, 231, and 232 are located on Pad 9 at the east end of Area G. The irregularly-shaped, asphaltic-concrete pad is approximately 570 ft long and 275 ft wide (see Figure 2-3 in LANL, 2003). The asphaltic concrete is 4 to 6 inches thick. Each dome is approximately 246 ft long and 88 ft, 7 inches wide (see Figures G-13a, G-13b, G-14a, and G-14b in LANL, 2003). The domes consist of a rigid aluminum frame that supports a tensioned-membrane (see Supplement G-1 in LANL, 2003). A series of aluminum I-beam trusses spanning the width of the structures comprise the dome framework. The membrane material is a polyester fabric coated with UV-stabilized plasticized PVC. The material is fungus-resistant and fire-retardant (i.e., self-extinguishing). The membrane is integrally connected to the frame to provide a fully tensioned fit. Each dome is equipped with personnel doors and a roll-up door for vehicle access. The domes are anchored to a concrete ring-wall with anchor bolts.

The interior floor perimeter of each dome is surrounded with a minimum 6-inch-high, 6-inch-wide asphaltic-concrete curb. A ramp is located at the vehicle entrance to each dome, which allows vehicles and container handling equipment to pass safely over the curbs and prevents run-on into the domes. The asphaltic-concrete pad is sloped 1 to 1.5% towards one end to allow any accumulated liquids to be contained within the curbed area at one end of the dome.

All waste containers at this CSU are stored on pallets or are otherwise elevated (e.g., metal supports, wooden timbers) to prevent contact with accumulated liquids. Secondary containment pallets used to store liquid wastes have sufficient capacity to contain 10% of the volume of containers or the volume of the largest container stored on them, whichever is greater. Secondary containment pallets typically used at TA-54 have a capacity ranging from 57 to 83 gallons.

The floor of Dome 230 is designed for secondary containment of liquids. The asphaltic-concrete floor is sloped (1%) towards a concrete sump at the east end of the dome (see Figure G-15 in LANL, 2003). The asphaltic-concrete floor and curbs in Dome 230 are lined with a double layer of 40 mil high-density polyethylene (HDPE), and the sump is lined with a single layer of 40 mil HDPE, creating an impervious layer to contain any liquids that might accumulate (see Supplement G-1 in LANL, 2003). The secondary containment capacity for Dome 230, which includes the sump and curbed area, is approximately 48,255 gallons, which exceeds the

amount necessary to hold 10% of the total storage capacity of the dome (330,000 gallons; see Supplement 2-1 in LANL, 2003). Any liquid that might accumulate within these storage domes (e.g., precipitation, liquids resulting from fire-suppression activities) is contained within the secondary containment pallets or curbed area or, at Dome 230, in the sump and curbed area. These liquids are removed and collected for characterization, as described in Permit Part 3, Section 3.7.

G.3.4.2 TA-54-412, Storage Dome 226, and Pad 1 CSU

TA-54-412 and Storage Dome 226 are located on Pad 1 in the northeastern portion of Area G (see Figure 2-3 in LANL, 2003). The irregularly-shaped, asphaltic-concrete pad is approximately 358 ft long and 213 ft wide, and is 4 to 6 inches thick.

TA-54-412 (see Figure G-16 in LANL, 2003) is a one story building that is approximately 220 ft long by 60 ft wide (13,200 ft^2). It consists of two structures: an internal primary confinement structure that houses the DVRS processing operations; and an external secondary confinement structure, which surrounds the primary confinement structure. The external secondary confinement structure (hereinafter referred to as “building”) provides protection from the elements and a temperature-controlled space for the internal structures and associated process equipment. A 16-ft by 16-ft roll-up vehicle-access door is located on the north end of the building. The roll-up vehicle access door opens to the secondary confinement structure area and serves as a pass-through for moving DVRS feed-stock waste into the primary confinement structure. There is also vehicle access on the south end of the building for removal of compacted waste from DVRS operations.

The floor and foundation of the building are concrete and the floor is painted with an epoxy sealant (see Supplement G-1 (LANL, 2003) for details). The concrete slab provides a structural foundation for the building and the shearer/baler system, and provides a direct working surface for movement of FRP boxes and processing equipment. The concrete slab is above grade to direct potential run-on away from the building. The floor in the building is sloped to a sump that has a grating cover to provide traction and a level working surface. The sump is treated with chemical-resistant epoxy filler-sealer and protective coating (see Supplement G-1 in LANL, 2003).

The primary confinement structure is housed entirely within the building and consists of five interconnected enclosures or cells. The system is approximately 150 ft long by 50 ft wide by 16 ft high and sits directly on the sealed concrete floor. The primary confinement structure is

constructed of 6-inch-thick, two-hour fire-rated sandwich panels made of 16-gauge steel and gypsum wallboard, measuring 40 ft wide by 4 or 8 ft long. The structure interlocks in a self-supporting steel framework that can be assembled into multiple configurations. The primary confinement structure has five cells, each of which is used for a specific function of the DVRS process. The cells are equipped with both personnel and large roll-up doors so that personnel, equipment, and material can access the structure and move from one cell to the next.

A cell is used to sort and segregate transuranic (TRU) waste and MTRUW, and contains various tools used to dismantle the FRP boxes; other cells are used for decontamination and packaging; and a final cell contains the shearer and baler used to compact waste items. The shearing and baling process takes place within a tightly sealed compartment. Waste containers that need to be dismantled are processed using circular saws, reciprocating saws, hammers, pry bars, and other tools, as needed. Waste containers are moved with trucks, forklifts, air pallets, and hand dollies.

The primary and secondary confinement structures are built to meet criteria specified in DOE-STD-1020-92, "*Natural Phenomena Hazards Design and Evaluation Criteria for DOE Facilities*" (DOE, 1992), for Performance Criteria 2 structures. Performance Criteria 2 structures include active fire suppression, emergency communications, and confinement systems that provide important safety functions related to emergency handling or hazard recovery, and are designed to protect the health and safety of workers and visitors during active operations. The building contains fire protection piping and heating, ventilation, and air conditioning ducting, and is a two-hour code-compliant fire-rated building. Panels in the primary confinement structure are the same material as the two-hour fire-rated wall construction with additional supports. A dry-pipe fire-protection system provides coverage for the primary confinement structure. A water collection area in the south end of the building provides for containment of any potential leaks, spills, or accumulated water resulting from the activation of the fire protection system. Liquids

that potentially accumulate within the sump area (e.g., liquids resulting from fire-suppression activities) are collected for characterization, as described in Part 3, section 3.7. Negative ventilation air pressure is maintained throughout the building and primary confinement structure, with discharge through a multi-stage HEPA-filtered stack.

Storage Dome 226 is approximately 286 ft long and 88 ft, 7 inches wide (see Figures G-17a and G-17b in LANL, 2003). The design and materials of construction for Dome 226 are the same as for domes described in Section G.3.4.1 of this TA-54 Container Management section. The

dome is equipped with personnel doors and a roll-up door for vehicle access. It is anchored to the concrete ring wall with anchor bolts.

The interior floor perimeter of Dome 226 is surrounded with a minimum 6-inch-high, 6-inch-wide asphaltic-concrete curb. A ramp is located at the vehicle entrance to the dome, which allows vehicles and container handling equipment to pass safely over the curb and prevents run-on into the dome. The asphaltic-concrete pad is sloped 1 to 1.5% towards one end to allow any accumulated liquids to be contained within the curbed area at one end of the dome.

All waste containers at this CSU are stored on pallets or are otherwise elevated (e.g., metal supports, wooden timbers) to prevent contact with accumulated liquids. Secondary containment pallets used to store liquid wastes have sufficient capacity to contain 10% of the volume of containers or the volume of the largest container stored on them, whichever is greater. Secondary containment pallets typically used at TA-54 have a capacity ranging from 57 to 83 gallons. Any liquid that might accumulate within this dome (e.g., precipitation, liquids resulting from fire-suppression activities) is contained within the secondary containment pallets or curbed area. These liquids are removed and collected for characterization, as described in Section 2.6 (LANL, 2003).

G.3.4.3 Storage Dome 48 and Pad 3 CSU

Storage Dome 48 is located at the eastern end of Area G on Pad 3. Pad 3 is constructed of asphaltic concrete to a thickness of four inches, and is approximately 339 ft long and 50 ft wide. Storage Dome 48 is 285 ft long and 50 ft wide, and has a peak height of 24 ft (see Figure G-18 in LANL, 2003). The design and materials of construction for Dome 48 are the same as for the domes described in Section G.3.4.1 of this TA-54 Container Management section. The dome is equipped with a double-panel rolling door at the south end of the dome and eight personnel

doors, located approximately every 80 ft along the dome's length, allow for adequate access both by vehicles and by personnel. The interior perimeter of the dome is surrounded by a 6-inch-high, 8-inch-wide asphaltic-concrete curb, which helps prevent run-on into and runoff from the dome. An asphaltic-concrete ramp located at the vehicle entrance allows vehicles and container handling equipment to pass safely over the curb. The dome is anchored to Pad 3 with standard drift pins.

All waste containers at this CSU are stored on pallets or are otherwise elevated (e.g., metal supports, wooden timbers) to prevent contact with accumulated liquids. Secondary containment

pallets used to store liquid wastes have sufficient capacity to contain 10% of the volume of containers or the volume of the largest container stored on them, whichever is greater. Secondary containment pallets typically used at TA-54 have a capacity ranging from 57 to 83 gallons. Any liquid that might accumulate within this dome (e.g., precipitation, liquids resulting from fire-suppression activities) is contained within the secondary containment pallets or curbed area. These liquids are removed and collected for characterization, as described in Permit Part 3, Section 3.7~~Section 2.6 (LANL, 2003)~~.

G.3.4.4 Pad 10 (former Pads 2 and 4) and Transuranic Waste Characterization Facilities CSU

Pad 10 ~~will be~~is constructed at the location of former Pads 2 and 4. The irregularly-shaped pad ~~is planned to~~ measures approximately 350 ft long by 250 ft wide and is~~will be~~ constructed of asphaltic concrete (see Figures 2-3 and 2-8 in LANL, 2003). The transuranic waste characterization facilities and container storage are~~will be~~ located on this pad.

The transuranic waste characterization facilities ~~will~~ consist of mobile and/or modular units equipped with instruments and equipment for waste characterization and repackaging. The transuranic waste characterization facilities may include the following: drum-loading or receiving unit(s); equilibration units(s); gas mobile characterization unit(s); mobile repack units; and nondestructive radioassay unit(s).

All waste containers at this CSU will be stored on pallets or otherwise elevated (e.g., metal supports, wooden timbers) to prevent contact with accumulated liquids. Secondary containment pallets used to store liquid wastes will have sufficient capacity to contain 10% of the volume of containers or the volume of the largest container stored on them, whichever is greater. Secondary containment pallets typically used at TA-54 have a capacity ranging from 57 to 83

gallons. Any liquid that might accumulate (e.g., precipitation, liquids resulting from fire-suppression activities) will be contained within the secondary containment pallets. These liquids will be removed and collected for characterization, as described in Permit Part 3, Section 3.7.

G.3.4.5 Storage Domes 49 and 224; Storage Sheds 144, 145, 146, 177, 1027, 1028, 1030, and 1041; and Pads 5, 8, and 7 CSU

This CSU is located in the south-central portion of Area G, and consists of three pads, two domes, and eight sheds (see Figure 2-3 in LANL, 2003). Storage Dome 49 is located on Pad 5, and Storage Dome 224 is located on Pad 8. The storage sheds are located on Pad 7. The

pads are constructed of asphaltic concrete. Pad 5 is approximately 500 ft long, 65 ft wide, and 4 inches thick. It is sloped approximately 2% from north to south. Pad 8 is approximately 150 ft long, 95 ft wide, and 3 inches thick. It is sloped approximately 1% from west to east. Pad 7 is approximately 200 ft long, 64 ft wide, and 4 inches thick. It is sloped approximately 1% from west to east.

Storage Dome 49 is 440 ft long and 60 ft wide, and has a peak height of approximately 26 ft (see Figure G-19 in LANL, 2003). The design and materials of construction for Dome 49 are the same as for the domes described in Section G.3.4.1 of this TA-54 Container Management section. The dome is equipped with a double-panel rolling door at the north end of the dome and six personnel doors to allow for adequate access both by vehicles and by personnel. The interior perimeter of the dome is surrounded by a 6-inch-high, 8-inch-wide asphaltic-concrete curb, which helps prevent run-on into and runoff from the dome. An asphaltic-concrete ramp located at the vehicle entrance to Dome 49 allows vehicles and container handling equipment to pass safely over the curb. The dome is anchored to Pad 5 with standard drift pins.

Storage Dome 224 is approximately 110 ft long and 60 ft wide, with a peak height of 26 ft (see Figure G-20 in LANL, 2003). The design and materials of construction for Dome 224 are essentially the same as for the domes described in Section G.3.4.1 of this Attachment Section. This dome is anchored to Pad 8 with anchor bolts. It is equipped with a single-panel roll-up door at the north end and four personnel doors to allow adequate access by vehicles and by personnel. A 1-ft, 8-inch wide by 2-ft, 4-inch deep concrete ring wall surrounds the interior of Dome 224.

Storage Sheds 144, 145, 146, and 177 are prefabricated sheds constructed of steel. Each shed measures 6 ft long, 5 ft wide, and 9 ft high (see Supplement G-1 in LANL, 2003). Access to each shed is obtained through a single door. The sheds are elevated by design, which prevents run-on. Each shed is constructed with a liquid-tight sump to ensure containment of any potential leaks or spills and to prevent runoff. The floor of each shed is constructed of steel and has a metal grate that covers the entire sump area. Containers are placed directly on the metal grates, which prevent contact with liquids that may have accumulated in the sumps. The interior of each shed and sump is coated with chemically-resistant epoxy paint. The designed sump storage capacity of each shed is 120 gallons (see Supplement G-1 in LANL, 2003), which exceeds the amount necessary to hold 10% of the total storage capacity of each shed (330

gallons; see Supplement 2-1). Additional engineering details and technical specifications for these sheds are provided in Supplement G-1 (LANL, 2003).

Storage Sheds 1027, 1028, 1029, and 1041 have the same basic design specifications as Sheds 68, 69, and 70 described in Section G.2.4.1 of this TA-54 Container Management section. Each shed is equipped with three sets of double doors on one side of the shed for ease of access. Sheds 1027, 1028, 1030, and 1041 contain a single compartment and sump within each shed (see Figure G-21 in LANL, 2003). The designed storage capacity of each sump is 750 gallons, which exceeds the amount necessary to hold 10% of the total capacity of each shed (1,760 gallons; see Supplement 2-1 in LANL, 2003). Additional engineering details and technical specifications for these sheds are provided in Supplement G-1 (LANL, 2003).

Dome 224 is designed for secondary containment of liquids (see Figure G-22 in LANL, 2003). The asphaltic-concrete floor is sloped 0.5% towards a concrete sump in the center of the dome. A ramp at the entrance to the dome allows movement of waste containers and prevents run-on. The floor, sump, and curbs are lined with a double layer of HDPE (80 mil and 40 mil) creating an impervious layer to contain any liquids that might accumulate (see Supplement G-1 in LANL, 2003). The secondary containment capacity for Dome 224 is approximately 19,150 gallons, which exceeds the amount necessary to hold 10% of the total storage capacity of the dome (95,040 gallons; see Supplement 2-1 in LANL, 2003).

All waste containers at this CSU are stored on pallets or are otherwise elevated (e.g., metal supports, wooden timbers) to prevent contact with accumulated liquids. Secondary containment pallets used to store liquid wastes have sufficient capacity to contain 10% of the volume of

containers or the volume of the largest container stored on them, whichever is greater. Secondary containment pallets typically used at TA-54 have a capacity ranging from 57 to 83 gallons. Any liquid that might accumulate within the domes and sheds (e.g., precipitation, liquids resulting from fire-suppression activities) is contained within the secondary containment pallets, curbed areas, or sumps (where present). These liquids are removed and collected for characterization, as described in Permit Part 3, Section 3.7.

G.3.4.6 Storage Domes 153 and 283 and Pad 6 CSU

This CSU is located in the north-central portion of Area G, and consists of two domes on a pad (see Figure 2-3 in LANL, 2003). Storage Domes 153 and 283 are located on Pad 6. The design and materials of construction for Domes 153 and 283 are the same as for domes

described in Section G.3.4.1 of this Attachment Section. Pad 6 is constructed of asphaltic concrete, and is approximately 633 ft long, 99 ft wide, and 4 inches thick. It is sloped approximately 1.2% from west to east.

Dome 153 is approximately 326 ft long and 60 ft wide, with a peak height of 26 ft (see Figure G-23 in LANL, 2003). A double-panel rolling door is located at the west end of the dome, and 10 personnel doors are located approximately every 40 to 125 ft along the dome's length. Dome 283 is approximately 250 ft long and 60 ft wide, with a peak height of 26 ft (see Figure G-24 in LANL, 2003). A double-panel rolling door is located at the east end of the dome, and 10 personnel doors are located approximately every 50 ft along the dome's length. These accesses allow adequate traffic flow of vehicles and personnel into and out of the dome. A 6-inch-high, 8-inch-wide asphaltic-concrete curb surrounds the interior perimeter of both domes to help prevent run-on and runoff. An asphaltic-concrete ramp is located at the vehicle entrance of each dome to allow vehicles and container-handling equipment to pass safely over the curb. Domes 153 and 283 are anchored to Pad 6 with standard drift pins.

All waste containers at this CSU are stored on pallets or are otherwise elevated (e.g., metal supports, wooden timbers) to prevent contact with accumulated liquids. Secondary containment pallets used to store liquid wastes have sufficient capacity to contain 10% of the volume of containers or the volume of the largest container stored on them, whichever is greater. Secondary containment pallets typically used at TA-54 have a capacity ranging from 57 to 83 gallons. Any liquid that might accumulate within the domes (e.g., precipitation, liquids resulting

from fire-suppression activities) is contained within the secondary containment pallets and curbed areas. These liquids are removed and collected for characterization, as described in Permit Part 3, Section 3.7.

G.3.4.7 Storage Shed 8 CSU

Storage Shed 8 is located in the north-central portion of Area G (see Figure G-25 in LANL, 2003). The shed is 40 ft long and 16 ft wide, and has a 14-ft-high galvanized steel roof that slopes to the north. The siding of Storage Shed 8 is constructed of galvanized steel and the foundation is constructed of concrete. Two overhead doors and one personnel door on the south side of the shed allow both vehicles and personnel to access the shed. The shed also has a 6-inch high, 8-inch-wide asphaltic-concrete curb to prevent runoff. A concrete slab on the south side of the shed is sloped away from the shed's foundation to prevent run-on.

All waste containers at this CSU are stored on pallets or are otherwise elevated (e.g., metal supports, wooden timbers) to prevent contact with accumulated liquids. Secondary containment pallets used to store liquid wastes have sufficient capacity to contain 10% of the volume of containers or the volume of the largest container stored on them, whichever is greater. Secondary containment pallets typically used at TA-54 have a capacity ranging from 57 to 83 gallons. Any liquid that might accumulate (e.g., precipitation, liquids resulting from fire-suppression activities) is contained within the secondary containment pallets and curbed area. These liquids are removed and collected for characterization, as described in Permit Part 3, Section 3.7.

G.3.4.8 TA-54-33 CSU

TA-54-33 is located in the north-central portion of Area G and consists of a dome attached to a concrete-block building (see Figure G-26 in LANL, 2003). This CSU is used for waste storage and potential or future waste characterization activities. The dome and building are located on a concrete foundation surrounded by an asphaltic-concrete pad. The concrete slab is 8 inches thick and overlies 6 inches of base course. The concrete-block building attached to the dome is approximately 40 ft long and 34 ft wide. The dome is 157 ft long and 50 ft wide, with a peak height of 24 ft. A double-panel rolling door is located at the west end of the dome for vehicle access. A single-panel rolling door is located at the southeast end of the dome for container-handling access. Two personnel doors are located approximately 40 ft apart along the north

wall of the dome. Two additional personnel doors are located in the concrete-block building; one on the west side, and one on the east side. In addition, two overhead doors are located on the north side of the building to allow free movement of personnel and container-handling equipment between the building and the dome. The interior perimeter of the dome is surrounded with a 6-inch-high, 8-inch-wide concrete curb to prevent run-on and runoff. The concrete floors of Rooms 100, 100A, 100B, 100C, and 105 also slope inward to prevent runoff.

The design and materials of construction for the TA-54-33 dome are the same as for domes described in Section G.3.4.1 in this TA-54 Container Management section. The dome's aluminum frame is directly connected to the building, which extends approximately 5 ft into the dome. Inside the dome, the concrete foundation is sloped to a 6-inch-wide centralized concrete drainage trench that is covered with 12-inch-wide steel grating. The trench slopes toward a steel sump located at the east end of the dome. Two additional trenches, located in Rooms 100A

and 100B, are perpendicular to and feed into the main trench. A floor drain in Room 105 connects with the trench in Room 100A.

The steel sump is located within a concrete basin that has 8-inch-thick walls, a 9-inch-thick base, and measures approximately 15 ft long by 7 ft wide by 6 ft deep. The sump is approximately 14 ft long by 6.5 ft wide by 5 ft deep and has a capacity of 3,473 gallons. A primary holding tank associated with the sump is located in a concrete basin that is 15 ft long by 12 ft wide by 5.5 ft deep and has a capacity of approximately 7,405 gallons. A secondary holding tank associated with the sump is located in a separate concrete basin that is 12 ft long by 12 ft wide by 5.5 ft deep and has a capacity of approximately 5,924 gallons. These basins have the capacity to contain any spills or leaks resulting from a potential overflow or breach of the holding tanks.

The discussions of the trench and holding tank system at TA-54-33 are provided for completeness and informational purposes only. The trench and tank system, including all associated structures and systems (e.g., basins, piping) do not require a Resource Conservation and Recovery Act (RCRA) permit.

All waste containers at this CSU are stored on pallets or are otherwise elevated (e.g., metal supports, wooden timbers) to prevent contact with accumulated liquids. Secondary containment pallets used to store liquid wastes have sufficient capacity to contain 10% of the volume of containers or the volume of the largest container stored on them, whichever is greater. Secondary containment pallets typically used at TA-54 have a capacity ranging from 57 to 83 gallons. Any liquid that might accumulate (e.g., precipitation, liquids resulting from fire-suppression activities) is contained within the curbed area of the dome, within the sump, within the building, or within secondary containment pallets. These liquids are removed and collected for characterization, as described in Permit Part 3, Section 3.7.

G.3.4.9 Storage Dome 375 and Pad 11 CSU

Storage Dome 375 is located in the western portion of Area G and is used for storage of hazardous waste, MLLW, and MTRUW. It measures approximately 300 ft long by 100 ft wide (see Figure G-27 in LANL, 2003). The building is an aluminum A-frame truss design that is anchored to a concrete ring wall. The dome is of modular construction utilizing a membrane/fabric covering. It is equipped with 14 personnel doors and two roll-up doors, one each at the east and west ends of the building. Ramped entrances allow for safe movement of container handling equipment and vehicle access. The storage dome is located on Pad 11,

which is constructed of asphaltic-concrete and measures approximately 478 ft long by 137 ft wide. Pad 11 is approximately 4 inches thick and slopes approximately 1 to 2% to the southeast.

All waste containers at this CSU are stored on pallets or are otherwise elevated (e.g., metal supports, wooden timbers) to prevent contact with accumulated liquids. Secondary containment pallets used to store liquid wastes have sufficient capacity to contain 10% of the volume of containers or the volume of the largest container stored on them, whichever is greater. Secondary containment pallets typically used at TA-54 have a capacity ranging from 57 to 83 gallons. Any liquid that might accumulate (e.g., precipitation, liquids resulting from fire-suppression activities) is contained within the building and/or within secondary containment pallets. These liquids are removed and collected for characterization, as described in Section 2.6 (LANL, 2003).

G.4 TA-54 WEST CONTAINER STORAGE UNITS [20.4.1 NMAC, Subpart V, Part 264, Subpart I]

The following provides specific information on current facility operations and waste management practices at the TA-54 West CSUs. This includes a discussion of security and access control, preparedness and prevention, hazards prevention, and design information for the TA-54 West CSUs. This information is submitted to fulfill the requirements of 20.4.1 NMAC, Subpart V, Part 264, Subpart I [6-14-00]. Detailed information is subject to change.

G.4.1 Security and Access Control [20.4.1 NMAC §§ 270.14(b)(4) and 270.14(b)(19)(viii); 20.4.1 NMAC § 264.14]

Security at TA-54 West is maintained by both artificial and natural barriers. These barriers prevent unauthorized entry of persons or livestock into TA-54 West and satisfy the requirements of 20.4.1 NMAC §§ 264.14(a) and 264.14(b)(2) [6-14-00]. An 8-ft-high chain-link security fence with barbed wire at the top surrounds the entire perimeter of TA-54 West. Bilingual (i.e., English and Spanish) warning signs are posted on the fence at 50- to 75-ft intervals and can be seen from any approach to this area. The legends on the signs indicate "Danger—Hazardous Waste Storage Area" and "Unauthorized Personnel~~s~~ Keep Out." Existing signs with a legend other than "Danger-Unauthorized Personnel Keep Out" may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion, and that entry onto the active portion can be dangerous. The signs are legible from a distance of 25 ft. TA-54 West is

patrolled by ~~PTLA~~ security personnel during non-operational hours to ensure that the gates are locked and that unauthorized entry has not occurred. The entire security fence is also inspected by on-site personnel and repairs are made, as necessary. In accordance with 20.4.1 NMAC § 270.14(b)(19)(viii) [6-14-00], the locations of the security fence, entry gates, and entry stations are shown on Figure 2-14 in Section 2.0 (LANL, 2003). In addition to the fence and entry station, cliffs on the north side of TA-54 West provide a natural barrier to discourage unauthorized entry.

Authorized individuals are permitted access to the Indoor CSU at TA-54-38 through the badge reader at the west entrance to the building. Visitors, subcontractors, and other personnel that do not have a badge must gain access to the building by contacting an authorized person, and must sign the visitor logbook. When leaving TA-54-38 to go to the adjacent building (TA-54-34) or the Outdoor CSU, it is not necessary for authorized personnel to use the badge reader to exit TA-54-38. If leaving TA-54 West completely, however, authorized personnel must badge out at the badge reader. Visitors must always sign out on the visitor logbook when leaving the building.

G.4.2 Preparedness and Prevention [20.4.1 NMAC, Subpart V, Part 264, Subpart C; 20.4.1 NMAC § 270.14(b)(8)]

The following presents information on the emergency equipment available at the TA-54 West CSUs to comply with the preparedness and prevention requirements of 20.4.1 NMAC, Subpart V, Part 264, Subpart C [6-14-00]. This includes the approximate locations of the fire extinguishers, shower/eyewash stations, spill center, and communication systems.

<u>Required Equipment [20.4.1 NMAC § 264.32]</u>

TA-54-38 is equipped with an audible alarm system to alert personnel of fire or the need to evacuate the area. Fire alarm pull stations are located throughout the building and can be activated in the event of a fire. Strobe lights mounted at the fire alarms and at TA-54-34, just north of TA-54-38, flash upon activation of the fire alarms to visually alert personnel. The alarm system can also be activated by using evacuation alarm buttons located near the entrances to the building. Upon activation of the evacuation alarm system, horns sound to alert personnel of emergency conditions. The building's manual fire alarm pull stations at TA-54 West are connected to the LACFD through LANL's central alarm system at all times. The evacuation alarm system is a local system that notifies occupants in TA-54-38 and TA-54-34 of a local

emergency. Additionally, a roll-up door between the high and low bays has heat sensitive links attached to a safety chain that melt at a certain temperature and cause the door to close.

TA-54-38 is also equipped with telephones to provide adequate communication and to summon external emergency assistance, if necessary. Paging telephones are located throughout the building and are used to contact on-site personnel. Paging telephones are also used in the event of an emergency to communicate the nature and location of hazardous conditions to personnel in the area. The alarm system is interrupted when the paging telephone system is activated to allow personnel to hear the announcement. Additionally, an emergency telephone is located outside the main entry area. Personnel working within the building can also use these telephones to summon assistance from local emergency response teams in case of emergency.

Fire control equipment is available for use within TA-54-38 and at the Outdoor CSU. Portable ABC rated~~halon~~ fire extinguishers are located in the high bay, low bay, and at the Outdoor CSU. The fire extinguisher located by the east personnel entrance door in the low bay can also be used at the loading dock. Depending on the size of the fire and the fuel source, fire extinguishers can be

used by on-site personnel. However, LANL policy encourages immediate evacuation of the area and notification of appropriate emergency personnel. TA-54-38 is equipped with a smoke-activated dry-pipe sprinkler system in the low bay and with heat-activated dry-pipe fire suppression systems in the high bay and at the loading dock. A fire hydrant installed according to National Fire Protection Association standards is located approximately 220 ft west of TA-54-38 near the west entrance to TA-54 West. Water is supplied to the fire hydrant by a municipal water system through 8-inch pipes at an adequate volume and pressure to satisfy the requirements of 20.4.1 NMAC § 264.32 [6-14-00].

A portable chemical spill center is maintained within TA-54-38. It contains sorbents and PPE. Personnel working anywhere within the building have access to this spill center. Trained personnel use this equipment to mitigate small containable spills when they are certain their actions will not put themselves or others at risk. Personnel decontamination equipment available includes a safety shower and eyewash located in the high bay and a safety shower and eyewash on the loading dock.

G.4.3 Hazards Prevention [20.4.1 NMAC, Subpart V, Part 264, Subpart C; 20.4.1 NMAC § 270.14(b)(8)]

In accordance with 20.4.1 NMAC, Subpart V, Part 264, Subpart C [6-14-00], the TA-54 West CSUs are designed and operated to minimize the possibility of a fire, explosion, or any unplanned releases of hazardous wastes or hazardous waste constituents which could threaten human health or the environment. The following discusses the specific procedures, equipment, and structures used at TA-54 West to mitigate the effects of power outages. Prevention of run-on and runoff at TA-54 West is discussed in Section G.1.4.2 of this TA-54 Container Management Attachment~~2.10.3 of the permit renewal application (LANL, 2003)~~.

Mitigating Effects of Power Outages [20.4.1 NMAC § 270.14(b)(8)(ii)]

Electrical power is supplied to TA-54-38 through a transformer located north of the building. In the event of a power failure, operations in the building cease. If electrical power is not restored quickly or if container handling equipment fails, containment at the TA-54 West CSUs is not affected. Monitoring equipment alarms are operated by supplied power, but will continue to operate on a backup battery. Emergency lighting is equipped with backup batteries.

G.4.4 TA-54 West CSUs [20.4.1 NMAC § 270.15]

The following describes the two CSUs at TA-54 West. The two CSUs include the Indoor CSU and the Outdoor CSU. The Indoor CSU is comprised of the low bay and the high bay at TA-54-38. The Outdoor CSU is comprised of the storage pad surrounding the north, east, and south sides of TA-54-38 and the loading dock at TA-54-38. The CSUs at TA-54 West are used to store MLLW and MTRUW in solid form. General dimensions, containment features, and materials of construction are discussed in this section to fulfill the requirements of 20.4.1 NMAC §§ 270.15(a)(1) and (2) [6-14-00].

G.4.4.1 Indoor CSU

TA-54-38 is constructed of 36-ft-high pre-cast concrete panel walls topped by pre-stressed double-T concrete roof sections. Its foundation consists of a 6-inch reinforced concrete slab on compacted fill. The building is divided into several offices and houses the Indoor CSU, which includes the low bay and the high bay (see Figure G-28 in LANL, 2003).

The low bay is approximately 40 ft wide and 34 ft long. An 8-ft-wide by 12-ft-high roll-up door is located at the east end and opens to an outdoor loading dock. A second 8-ft-wide by 12-ft-high roll-up door is located in the southeast corner and opens into the high bay. The walls and floor of the low bay are coated with industrial grade enamel paint.

The high bay is approximately 40 ft wide and 80 ft long. The high bay is used for loading TRU waste and MTRUW into Transuranic Package Transporter-II containers. It is equipped with 14-ft-wide by 18-ft-high roll-up doors on the east and west ends to allow convenient, indoor loading of the tractor-trailers that transport shipments of waste to the Waste Isolation Pilot Plant. The high bay floor is unpainted and slopes at an angle of 1.5 degrees toward a central trench and sump. The trench is 5 inches wide, 6 inches deep, and 50 ft long. The entire length of the trench is covered with a metal grate and is designed to hold precipitation and snow melt from tractor-trailers. The sump is locked out. Potential liquids that accumulate within the sump area (e.g., precipitation, liquids resulting from fire-suppression activities) are removed and collected for characterization, as described in Permit Part 3, Section 3.7~~Section 2.6 (LANL, 2003)~~.

G.4.4.2 Outdoor CSU

The Outdoor CSU consists of the loading dock at TA-54-38 and the storage pad located on the north, east, and south sides of TA-54-38. The loading dock is 16 ft wide by 38 ft, 10 inches long and is covered by a metal awning. The platform is constructed of 6-inch cast-in-place concrete and is located approximately 4 inches above grade.

The boundary of the storage pad is delineated by the fence surrounding the pad. The approximate dimensions of the pad at the Outdoor CSU are shown on Figure 2-14 (LANL, 2003)**.** The pad is constructed of asphaltic concrete to a thickness of approximately 4 inches and slopes toward the curbed edges (see Figure 2-14 in LANL, 2003). This slope allows for storm water to run off the pad. Storage containers on this pad are elevated either by design or on a pallet.Mobile radioassay trailers and storage sheds for supplies and equipment are also stored on the pad at the Outdoor CSU.

G.5 REFERENCES

LANL, 2003, “Los Alamos National Laboratory Technical Area 54 Part B Permit Renewal Application”, Revision 3.0, June 2003, LA-UR-03-3579, Los Alamos National Laboratory, Los Alamos, New Mexico.

Ball, T., M. Everett, P. Longmire, D. Vaniman, W. Stone, D. Larssen, K. Greene, N. Clayton, and S. McLin, 2002, “Characterization Well R-22 Completion Report,” Los Alamos National Laboratory report LA-13893-MS, Los Alamos New Mexico.

LANL, 1998, “Hydrogeologic Workplan,” May 1998, Los Alamos National Laboratory, Los Alamos, New Mexico.

LANL, 1995, “Geologic and Hydrologic Records of Observation Wells, Test Holes, Test Wells, Supply Wells, Springs, and Surface Water Stations in the Los Alamos Area,” LA-12883-MS, January 1995.

DOE, 1992, “Natural Phenomena Hazards Design and Evaluation Criteria for DOE Facilities,” DOE-STD-1020-92.

TA-55

CONTAINER STORAGE

TA-55

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LIST OF ABBREVIATIONS/ACRONYMS

20.4.1 NMAC	New Mexico Administrative Code, Title 20, Chapter 4, Part 1
CSU	container storage unit(s)
DOT	U.S. Department of Transportation
ft	feet/foot
gal	gallon
in.	inches
LANL	Los Alamos National Laboratory
m^3	cubic meters
ppmw	parts per million by weight
SWB	standard waste box
TA	technical area

TA-55
ATTACHMENT G
CONTAINER STORAGE

The information in this Attachment Section addresses the applicable container storage requirements of the New Mexico Administrative Code, Title 20, Chapter 4, Part 1 (20.4.1 NMAC) §270.15 and 20.4.1 NMAC, Subpart V, Part 264, Subpart I, revised June 14, 2000 [6-14-00]. This Section provides detailed descriptions of the seven container storage units (CSU) located at Technical Area (TA) 55. Detailed engineering drawings are provided as Figures G-1 through G-3 (LANL, 2003).

G.1 CONTAINER STORAGE AT TA-55

TA-55 is located in the north central portion of Los Alamos National Laboratory on a mesa between a branch of Mortandad Canyon on the north and Two Mile Canyon on the south. TA-55 is a plutonium processing facility, which began operating in 1978. Hazardous and mixed waste container storage at TA-55 is conducted at seven CSUs. These CSUs are identified as B40, B05, K13, B45, the Vault, the Container Storage Pad, and TA-55-185. The following sections provide general dimensions, containment features, and materials of construction for each CSU to satisfy the requirements of 20.4.1 NMAC §270.15(a)(1) and (2) [6-14-00].

G.1.1 B40

The B40 CSU is used to store containers of hazardous and mixed waste that may contain liquids. (B40 was described as Area 1 in previous permitting applications.) B40 is located in the southwest section of the TA-55-4 basement, as shown on Figure G-1 (LANL, 2003). The CSU is L-shaped and has long dimensions of 61.5 by 55 feet (ft). The maximum storage capacity of this unit is 21,500 gallons (gal), the equivalent of 391 55-gal drums. The types of waste containers holding hazardous or mixed waste that are stored in B40 include 5-, 10-, 12-, 15-, 30-, 55-, and 85-gal drums; large waste boxes; special order waste boxes; and standard waste boxes (SWB). Additionally, items greater than the above mentioned sizes (and free of liquids) will be staged and wrapped tightly in plastic prior to being shipped in DOT approved containers.

G.1.2 B05

The B05 CSU is used to store containers of hazardous and mixed waste that do not contain liquids. (B05 was described as Area 3 in previous permitting applications.) B05 is located in the southwest section of the TA-55-4 basement, as shown in Figure G-1 (LANL, 2003). The CSU is rectangular shaped and is 26 ft long by 10 ft wide. The maximum storage capacity of this unit is 3,600 gal, the equivalent of 66 55-gal drums. The types of waste containers holding hazardous or mixed waste that will be stored in B05 include 30-, 55-, and 85-gal drums, large waste boxes; and SWBs.

G.1.3 K13

The K13 CSU is used to store containers of hazardous and mixed waste that may contain liquids. (K13 was described as Area 4 in previous permitting applications.) K13 is located in the northwest section of the TA-55-4 basement, as shown on Figure G-1 (LANL, 2003). The CSU is rectangular shaped and is 16 ft long by 13 ft wide. The maximum storage capacity of this unit is 2,500 gal, the equivalent of 46 55-gal drums. The types of waste containers holding hazardous or mixed waste that will be stored in K13 include 0.25-, 0.5-, 0.75-, 1-, 2-, 4-, and 6-liter/quart containers; 5-, 10-, 12-, and 15-gal containers; 30-, 55-, and 85-gal drums; and large waste boxes.

G.1.4 B45

The B45 CSU is used to store containers of hazardous and mixed waste that do not contain liquids. (B45 was described as Area 5 in previous permitting applications.) B45 is located in the northeast section of the TA-55-4 basement, as shown on Figure G-1 (LANL, 2003). The CSU is rectangular shaped and is 45 ft long by 17.5 ft wide. The maximum storage capacity of this unit is 11,000 gal, the equivalent of 200 55-gal drums. The types of waste containers holding hazardous or mixed waste that will be stored in B45 include 5-, 10-, 12-, and 15-gal containers; 55- and 85-gal drums; large waste boxes; and SWBs.

G.1.5 Vault

The Vault CSU is used to store containers of mixed waste that may contain liquids. (The Vault was described as Area 6 in previous permitting applications.) The Vault is located along the eastern wall of the basement at TA-55-4, as shown on Figure G-1 (LANL, 2003), and is approximately 79.5 ft long by 50.5 ft wide. The maximum storage capacity of this unit is 4,000 gal, the equivalent of approximately 73 55-gal drums. The types of waste containers holding

mixed waste that will be stored in the Vault include 0.25-, 0.5-, 0.75-, 1-, 2-, 4-, and 6-liter/quart containers; and 5-, 10-, 12-, 15-, 30- and 55-gal drums.

G.1.6 Container Storage Pad

The Container Storage Pad is used to store containers of hazardous and mixed waste that may contain liquids. The pad is located outside and northwest of TA-55-4, as shown on Figure G-2 (LANL, 2003). It was installed in the mid-1980s and is constructed of asphaltic-concrete with a variable thickness of 4 to 6 inches (in.). The Container Storage Pad CSU is shaped like a trapezoid and measures 102 ft, 86 ft, 156 ft, and 105 ft. It also includes a rectangular strip measuring 70 ft by 10 ft on the southeast side. The pad is sloped, is elevated 2 to 4 in. above ground level, and has a culvert beneath the pad running from the northwest side to the southeast corner to minimize run-on of precipitation. The storage capacity of this area is 135,000 gal, the equivalent of approximately 2,455 55-gal drums. The types of waste containers holding hazardous or mixed waste that will be stored on the container storage pad include 0.25-, 0.5-, 0.75-, 1-, 2-, 4-, and 6-liter/quart containers; 30-, 55-, and 85-gal drums; SWBs; large waste boxes; and 5-, 10-, 12-, and 15-gal containers.

G.1.7 TA-55-185

TA-55-185 will be used to store containers of hazardous and mixed waste that do not contain liquids. TA-55-185 is located west of TA-55-4, as shown on Figure G-3 (LANL, 2003). The building was constructed in 1991 and consists of a steel frame with fiberglass insulation, metal walls, and a concrete floor. The TA-55-185 CSU will be approximately 60 ft long by 40 ft wide, and will have a maximum storage capacity of 30,000 gal, the equivalent of 546 55-gal drums. The types of waste containers holding hazardous or mixed waste that will be stored at TA-55-185 include 30-, 55-, and 85-gal drums; large waste boxes; and SWBs.

G.2 CONTAINMENT SYSTEMS [20.4.1 NMAC §§270.15(a)(1-5) and 270.15(b)(1-2)]

The B40, K13, Vault, and Container Storage Pad CSUs will be used to store liquid and/or potentially liquid-bearing wastes; therefore, the requirements of 20.4.1 NMAC §264.175(b) [6-14-00] are applicable for these CSUs. Table G-2 provides the secondary capacity associated with each of these CSUs (LANL, 2003).

Secondary containment at B40, K13, and the Vault CSUs is primarily provided by self-containment pallets, covered self-containment pallet, single-drum pallets, or storage cabinets.

Secondary containment at the Container Storage Pad CSU is provided by covered self-containment pallets. Each containment system is described below.

- Self-Containment Pallet: Molded high-density polyethylene base with a fiberglass grating that elevates the containers over a reservoir that is capable of containing leaks and spills from the containers.
- Covered Self-Containment Pallet: Molded, chemical-resistant, high density polyethylene with a removable polyethylene grating and a hinged two-part cover, which is impervious to precipitation. Supplement G-1 (LANL, 2003) provides detailed information on the covered self-containment pallets.
- Single-Drum Containment Pallet: An 85-gal container made of heavy-duty polyethylene designed to hold one 55-gal drum~~. O~~or a 55 or 85 gal drum holding a lesser volume container.
- Cabinet: An epoxy-enamel-coated steel frame with a base that has a raised, leakproof sill. Each shelf is lined with a high-density polyethylene tray that is capable of containing leaks and spills from containers.

The B40, K13, and Vault CSUs are located in the basement of TA-55-4. This basement has a recessed floor that provides another level of containment for the liquid wastes stored there. The floor consists of a 10-in.-thick reinforced concrete slab that is free of cracks and gaps, is compatible with the wastes stored in the area, will effectively prevent the migration of waste to the environment, and is capable of collecting releases and accumulated liquids until the material is removed. Each of these containment systems will hold, at a minimum, 10 percent of the volume of the potential liquid-bearing containers or the volume of the largest potential liquid-bearing container stored, whichever is greater, pursuant to the requirements of 20.4.1 NMAC §264.175(b)(3) [6-14-00]. Containers holding hazardous or mixed waste in each CSU will be protected from potential contact with accumulated liquids by either being elevated or stored in an area that is designed and operated to remove accumulated liquids.

The B05, B45, and TA-55-185 CSUs will be used to store containers with only non-liquid bearing waste (i.e., solid form). These CSUs all reside in a building; therefore, run-on and run-off from storm events are not applicable. In the event of a water leak from facility systems, the TA-55-4 basement has sumps to contain the liquid. Drummed waste containers are placed on pallets, drum size roller dollies, or stored in self containment structures. SWBs will be placed

on pallets. Large waste boxes are elevated by design. All waste items in TA-55-185 will either be placed on pallets or are elevated by design.

G.3 SPECIAL REQUIREMENTS FOR IGNITIBLE, REACTIVE, AND INCOMPATIBLE WASTES [20.4.1 NMAC §270.14(b)(9), §270.15(c) and (d) and 20.4.1 NMAC §§264.17, 264.176, and 264.177]

Ignitable or reactive waste is stored at the K13 and B40 CSUs and on the Container Storage Pad. Pursuant to 20.4.1 NMAC §264.17 [6-14-00], LANL will follow specific waste management procedures for ignitable and reactive waste as discussed in Permit Part 2, Section 2.8.

Ignitable, reactive, and incompatible wastes will not be stored at B05, B45, and the Vault or at TA-55-185; therefore, the requirements of 20.4.1 NMAC §264.17, and 20.4.1 NMAC §270.15(c) and (d) [6-14-00] do not apply at these CSUs.

G.4 AIR EMISSION STANDARDS FOR CONTAINERS

This section addresses potential applicability of 20.4.1 NMAC, Subpart V, Part 264, Subpart CC [6-14-00], "Air Emission Standards for Tanks, Surface Impoundments, and Containers" to containers at TA-55, based on applicability criteria specified in 20.4.1 NMAC §264.1080 [6-14-00]. Subpart CC standards for containers require that containers of hazardous waste be covered or controlled so that there are no detectable emissions. These standards are not applicable to containers of radioactive mixed waste. The standards are also not applicable to containers of hazardous waste with less than 500 parts per million by weight (ppmw) volatile organics, containers that have received waste prior to the effective date of regulation (December 6, 1996), or containers of less than 0.1 cubic meters (m^3) (approximately 26 gal) capacity. LANL requires that Subpart CC requirements be met by the generator as part of the waste characterization process. The generator determines the concentration of volatile organics in a waste stream at the point of generation. The generator documents this determination for that waste stream, as described in Attachment C (*Waste Analysis Plan*).

Containers of less than 0.46 m^3 (approximately 119 gal) capacity and that meet U.S. Department of Transportation (DOT) specifications under the Code of Federal Regulations, Title 49, Part 178, will be kept closed during storage pursuant to 20.4.1 NMAC §264.1086(b)(1)(ii) [6-14-00]. Containers undergoing waste characterization activities may be open for access for the purposes described in 20.4.1 NMAC §264.1086(c) [6-14-00]. Containers of greater than 0.46 m^3 capacity that contain waste with greater than 500 ppmw volatile organics or those that are

greater than 0.1 m^3 capacity, do not meet DOT specifications, and contain wastes of greater than 500 ppmw volatile organic will be subject to a visual inspection and monitoring program as required by 20.4.1 NMAC §264.1088(b) [6-14-00].

G.5 REFERENCES

LANL, 2003, "Los Alamos National Laboratory Technical Area 55 Part B Permit Renewal Application", Revision 2.0, September 2003, LA-UR-03-6303, Los Alamos National Laboratory, Los Alamos, New Mexico.

Appendix K

Permit Attachment O- Hazardous Waste Management Units with Editing Marks

ATTACHMENT O

HAZARDOUS WASTE MANAGEMENT UNITS

TABLE O-1

Permitted Units Actively Managing Hazardous Waste

Includes units permitted to store and treat hazardous waste.

Process codes and associated process descriptions:

- S01-storage in containers
- S02-storage in tanks
- T01-treatment in tanks
- X01*-open burning
- X01**-open detonation

Unit Identifier	Process Codes	Operating Capacity	General Information
TA-3-29 Room 9010	S01	~~18,500~~11,200 gal	Building TA-3-29 Basement Room 9010 in Wing 9 Indoor storage unit ~~Contains Actinide Source Term Waste Test Program (STTP)~~
TA-3-29 Room 9020	S01	5,300~~18, 500~~ gal	Building TA-3-29 Basement Room 9020 in Wing 9 Indoor storage unit
TA-3-29 Room 9030	S01	~~18, 500~~2,000 gal	Building TA-3-29 Basement Room 9030 in Wing 9 Indoor storage unit
TA-16-388	X01*	250 pounds combustible material or 100 gallons of liquids per burn	Flash Pad Outdoor storage unit
TA-16-399	X01*	1,000 pounds per burn	Burn Tray Outdoor storage unit
TA-50-69 Indoor Area	S01	1,500 gal	Includes Rooms 102 and 103. Indoor storage unit ~~Non-liquid wastes only~~
TA-50-69 Outdoor Area	S01	30,000 gal	None Outdoor storage unit ~~Non-liquid wastes only~~
TA-54 Area G Pad 1	S01	502,920 gal	Includes TA-54-412 (DVRS), and Storage Dome 226 Outdoor storage unit

Unit Identifier	Process Codes	Operating Capacity	General Information
TA-54 Area G Pad 3	S01	213,840 gal	Includes Storage Dome 48 (TA-54-48) Outdoor storage unit
TA-54 Area G Pad 5	S01	623,480 gal	Includes Storage Domes 49 and 224; Storage Sheds 144, 145, 146, 177, 1027, 1028, 1030, and 1041 Pad 5 is a consolidation of former Pads 5, 7, and 8. Outdoor storage unit
TA-54 Area G Pad 6	S01	597,300 gal	Includes Storage Domes 153 and 283 Outdoor storage unit
TA-54 Area G Pad 9	S01	1,446,720 gal	Includes Storage Domes 229, 230, 231, and 232 Outdoor storage unit
TA-54 Area G Pad 10	S01	159,770 gal	Transuranic (TRU) Waste Characterization Facilities Pad 10 is a consolidation of former Pads 2 and 4. Outdoor storage unit
TA-54 Area G Pad 11	S01	682,440 gal	Includes Storage Dome 375 Outdoor storage unit
TA-54 Area G Storage Shed 8	S01	11,880 gal	Also referred to as TA-54-8 Indoor storage unit
TA-54 Area G TA-54-33	S01	108,240 gal	Also referred to as Drum Prep Facility Indoor storage unit
TA-54 Area L Container Storage Unit (above-ground)	S01	407,880 gal	Includes all area within fence except limited administrative areas. Includes Structures 31, 32, 35, 36, 39, 58, 68, 69, 70, 215 (former Area 1), and 216 (former Area 7). Outdoor storage unit with an indoor storage component
TA-54 West, Indoor CSU	S01	3,740 gal	Also referred to as TA-54-38 CSU includes High Bay and Low Bay ~~Non-liquid wastes only~~Indoor storage unit
TA-54 West, Outdoor CSU	S01	7,920 gal	Also referred to as loading dock TA-54-38 and Outdoor Pad surrounding TA-54-38 ~~Non-liquid wastes only~~Outdoor storage unit

Unit Identifier	Process Codes	Operating Capacity	General Information
TA-55-4, B40	S01	21,500 gal	Located in basement Referred to as Area 1 Indoor storage unit
TA-55-4, K13	S01	3,400 gal	Located in basement Referred to as Area 4 Indoor storage unit
TA-55-4, B05	S01	3,600 gal	Located in basement Referred to as Area 5 Non-liquid wastes only Indoor storage unit
TA-55-4, B45	S01	11,000 gal	Located in basement Non-liquid wastes only Indoor storage unit
TA-55-4, Vault	S01	4,000 gal	Located in basement Indoor storage unit Referred to as Area 6
TA-55-4 Mixed Waste Storage~~/Treatment~~ Tank~~s~~ System	S02~~, T04~~	~~Storage -~~ 137 gal ~~Treatment - 150 gal / day~~	TA-55-4, Room 401 Unit divided into two components~~units~~ (Evaporator Glovebox Storage Tank System and Cementation Storage Tank System) Indoor storage unit
TA-55-4 Cementation Unit	T04	150 gal/day	Stabilization treatment unit Indoor storage unit
TA-55-185	S01	30,000 gal	Located west of TA-55-4 Non-liquid waste only Indoor storage unit
TA-55-4, Outdoor Storage Pad	S01	135,000 gal	Located outside and west of TA-54-4 Outdoor storage unit

TABLE O-2

Permitted Units Undergoing Post-Closure Care

At the time of Permit Issuance (XX-XX-XXXX) there are no units in post-closure care.

Unit Identifier	Process Codes	Regulatory Status	Operating Capacity	General Information
(none)				

TABLE O-3*

Closed Units not in Post-Closure Care

Process codes and associated process descriptions:

- D80-disposal trench
- D83-surface impoundment disposal
- S01-storage in containers
- S02-storage in tanks
- S03-waste pile
- S04-surface impoundment
- S99-storage in shafts
- T01-treatment in tanks
- T03-incinerator
- T04-other treatment
- X01*-open burning
- X01**-open detonation

Unit Identifier	Process Codes	General Information
TA-3-102	S01	(High Explosives Storage Unit)
TA 9-39	S01	
TA 09-43	T04	Hydrothermal Processing Unit (HPU) unit never managed hazardous waste
TA-15-184,	T04, X01**	OD site (Phermix)) Site was never used to treat hazardous waste
TA-16-88	S01	unit never stored hazardous waste
TA-16-387	X01** T04	Flash Pad 387 Underwent RCRA closure in conjunction with Material Disposal Area (MDA) P in 2002.
TA-16-394	X01* and X01** T04	
TA-16-401	X01* and X01**	(Pressure Vessel - sand filter tank)
TA-16-406	X01* and X01**	(Pressure Vessel - sand filter tank)
TA-16 Surface Impoundment	S04 -D83	
TA-16 Incinerator	T03	(TA-16-1409)

Unit Identifier	Process Codes	General Information
TA-16, Material Disposal Area P	~~D80~~S03	
TA-21-61	S01	
TA-22-24	S01	(High Explosive Storage Unit)
TA-33-90	S01	Application was withdrawn and that the unit never stored hazardous waste.
TA-33-92	S01	Application was withdrawn and that the unit never stored hazardous waste.
TA-35-85, Surface Impoundment	S04 - D83	
TA-35-125, Surface Impoundment	S04 - D83	Closure by removal.
TA 35-128	T03	Packed Bed Reactor/Silent Discharge Plasma Research
TA-39, MDA-Y	D80	
TA-40, Scrap Detonation Unit	X01** T04	
TA-40-DF2 (magazine)	S01	Converted to a <90 day storage unit
TA-50-1, Batch Waste Treatment Unit (BWTU)	T01	
TA-50-1, Container Storage Unit(s) associated with BWTU	S01	
TA-50-1, Room 34B	S01	unit never managed hazardous waste
TA-50-1, Room 34C	S01	unit never managed hazardous waste
TA-50-1, Room 35	S01	unit never managed hazardous waste
TA-50-1, Room 36	S01	unit never managed hazardous waste
TA-50-1, Room 38	S01	unit never managed hazardous waste
TA-50-1, Room 38A	S01	unit never managed hazardous waste
TA-50-1, Room 59	S01	Radioactive Liquid Waste Treatment Facility (RLWTF)
TA-50-1, Room 60A	T04	Cementation Treatment Unit Proposed treatment process was revised to generator treatment in a < 90 day storage area.
TA-50-37	T03	Controlled Air Incinerator (CAI)

Unit Identifier	Process Codes	General Information
TA-50-37 RAMROD	T04	Radioactive Materials Research, Operations and Demonstration Facility (RAMROD). LANL withdraws permit request. Convert unit(s) to <90 day storage.
TA-50-37, Storage Tanks	S02	Located in Room 115
TA 50-37-112	S01, T03	Location of Controlled Air Incinerator (CAI), part of RAMROD Facility
TA-50-37-114	S01	Part of RAMROD
TA-50-37, Room 115	S01 - S02	Location of storage tanks and waste feed tanks Part of RAMROD
TA-50-37, Room 117	S01	Room used for container storage. Part of RAMROD
TA-50-37, Room 118	S01	Room used for container storage. Part of RAMROD
TA-50-114	S01	Storage shed
TA-50-137	S01	Storage Bldg Unit was never built
TA-50-138	S01	Storage Bldg Unit was never built
TA-50-139	S01	Storage pad Unit was never built
TA-50-140	S01	Storage pad Unit was never built
TA 53-166	S04	South Surface Impoundment Change from closure as a TSD to cleanup under HSWA
TA 53-166	S04	NE Surface Impoundment Change from closure as a TSD to cleanup under HSWA
TA 53-166	S04	NW Surface Impoundment Change from closure as a TSD to cleanup under HSWA
TA-54-L, Waste Oil Storage Tank (WOST)	S02	

Unit Identifier	Process Codes	General Information
TA-54-L, Truck Mounted Container Treatment System	T01	Unit was proposed in a 1993 permit modification and was withdrawn in a 1998 Part A.
TA-54-L, Bldg. 35, Storage/ Treatment Tanks (4)	S02 and (T01)	Pad below the tanks remains operational for waste storage.
TA-55-4, Oxygen Sparging Treatment Furnace	T04	Unit closed NMED certified on February 4, 1998.
TA-55-4, B38	S01	Unit closed NMED certified closure on January 3, 2006. Referred to as Area 2
~~TA-55-4, basement, Area 2~~	~~S01~~	
TA-55-4, basement. Area 7 North end of basement CSA	S01	Unit was never used for hazardous waste storage and was withdrawn in the 1998 Part A.
TA-55-4-401 Mixed waste Monitoring CSA (Area 8 also called FLO-1)	S01	Unit was never used for hazardous waste storage and was withdrawn in the 1998 Part A.
TA-55-4-401 Sphere Material Removal CSA (Area 9)	S01	Unit was never used for hazardous waste storage and was withdrawn in the 1998 Part A.
TA-55-4-401 CSA for Evaporator Salt Precipitate (Area 10)	S01	This unit was included as part of the evaporator glovebox storage tank system in the June 1996 TA-55 Part B
TA-55-4-433 Mixed Waste Monitoring CSA	S01	(Area 11 – referenced as Area 10 in June 1996) Unit was never used for hazardous waste storage and was withdrawn in the 1998 Part A.
TA-55-4-432 CSA Glovebox Process Waste	S01	(Area 12 - referenced as Area 11 in June 1996) Unit was never used for hazardous waste storage and was withdrawn in the 1998 Part A.
TA-55-41 CSA Vault	S01	Unit was never used for hazardous waste storage and was withdrawn in the 1998 Part A.
TA-63 Chemical Waste Treatment Skid	T01	This unit was never constructed and was withdrawn in the 1998 Part A application.
TA-63 Liquid Waste Storage Tanks (6)	S02	These tanks were never constructed and were withdrawn in the 1998 Part A application.

* This table is for informational purposes only.

TABLE O-4

Permitted Units Undergoing Closure

Process codes and associated process descriptions:

- D99-other disposal

Unit Identifier	Process Codes	Regulatory Status	General Information
TA-54 ~~Material Disposal~~ Area G Landfill	D99	Permitted	Unit consists of~~includes entirety of MDA-G~~ ~~Includes "60 Shafts",~~ Shaft~~s~~ 124~~, 145, 146 , Shafts 147, 148, and 149,~~ and Pit 29
TA-54 ~~Material Disposal~~ Area H Landfill	D99	Permitted	Unit consists of ~~includes entirety of MDA-H~~ ~~Includes~~ Shaft 9.
TA-54, ~~Material Disposal~~ Area L Landfill~~,~~	D99	Permitted	Unit consists of ~~includes entirety of MDA-L~~ ~~Includes~~ "Shafts 1, 13-17, and 19-34 and Impoundments B and D.

TABLE O-5*

Interim Status Units ~~Actively Managing Hazardous Waste~~

Hazardous waste management units at TAs 14, 36, and 39 are, at the time of draft permit issuance (August 2007), operating and regulated under interim status.

Process codes and associated process descriptions:

- X01*-open burning
- X01**-open detonation
- S99-other storage

Unit Identifier	Process Codes	Operating Capacity	General Information
TA-14-23	X01*	50 lbs HE/burn	Near Structure TA-14-23
TA-14-23	X01**	20 lbs HE/ detonation	Near Structure TA-14-23
TA-36-8	X01**	2000 lbs/ detonation	Near Structure TA-36-8
TA-39-6	X01**	1000 lbs/ detonation	Near Structure TA-39-6
TA-39-57	X01**	1000 lbs/ detonation	Near Structure TA-39-57
TA-54, Area L, Storage Shafts 36 & 37	S99	Interim Status	Referred to as Lead Stringer Shafts
TA-54, Area G, Storage Shafts 145 & 146	S99	Interim Status	

* This table is for informational purposes only.

Appendix L

Summary of Suggested Changes to
Permit Attachment P- Listings of SWMUs and AOCs

Summary of Requested Changes to Tables P-1, P-2, and P-3

SWMU/AOC	Requested Action
Table P-1	
SWMU 00-002	Delete from Table P-1.
AOC 00-010(b)	Delete from Table P-1.
AOC 00-030(k)	Delete from Table P-1.
SWMU 00-030(n)	Change “SWMU” to “AOC”.
SWMU 00-030(o)	Change “SWMU” to “AOC”.
SWMU 00-030(p)	Change “SWMU” to “AOC”.
AOC 00-033(b)	Delete from Table P-1.
AOC 00-034(a)	Delete from Table P-1.
SWMU 01-002	Delete from Table P-1.
AOC 03-001(i)	Delete from Tables P-1.
SWMU 03-104(z)	Change to SWMU 03-014(z).
SWMU 03-029	Add to Table P-1.
SWMU 03-032	Delete from Table P-1.
SWMU 03-045(i)	Delete from Table P-1.
AOC 03-052(f)	Change “AOC” to “SWMU”.
SWMU 15-009(l)	Delete from Table P-1.
SWMU 15-012(c)	Delete from Table P-1.
SWMU 15-012(d)	Delete from Table P-1.
SWMU 15-012(e)	Delete from Table P-1.
SWMU 15-012(f)	Delete from Table P-1.
SWMU 15-012(g)	Delete from Table P-1.
SWMU 16-002	Delete from Table P-1.
AOC 16-005(a)	Change “AOC” to “SWMU”.
AOC 16-005(c)	Change “AOC” to “SWMU”.
AOC 16-005(d)	Change “AOC” to “SWMU”.

Summary of Requested Changes to Tables P-1, P-2, and P-3

SWMU/AOC	Requested Action
AOC 16-005(e)	Change “AOC” to “SWMU”.
AOC 16-005(g)	Change “AOC” to “SWMU”.
AOC 16-005(h)	Change “AOC” to “SWMU”.
AOC 16-005(j)	Change “AOC” to “SWMU”.
AOC 16-005(k)	Change “AOC” to “SWMU”.
AOC 16-005(l)	Change “AOC” to “SWMU”.
AOC 16-005(m)	Change “AOC” to “SWMU”.
AOC 16-005(n)	Change “AOC” to “SWMU”.
SWMU 16-008(b)	Delete from Table P-1.
SWMU 16-009(b)	Delete from Table P-1.
SWMU 16-010(b)	Delete from Table P-1.
SWMU 16-010(c)	Delete from Table P-1.
SWMU 16-010(d)	Delete from Table P-1.
SWMU 16-010(e)	Delete from Table P-1.
SWMU 16-010(f)	Delete from Table P-1.
SWMU 16-010(j)	Delete from Table P-1.
SWMU 16-014	Delete from Table P-1.
SWMU 16-017	Delete from Table P-1.
SWMU 16-018	Delete from Table P-1.
AOC 16-024(e)	Change “AOC” to “SWMU”.
SWMU 16-032(c)	Add to Table P-1.
AOC C-19-001	Delete from Table P-1.
AOC C-20-001	Delete from Table P-1.
AOC C-20-002	Delete from Table P-1.
AOC C-20-003	Delete from Table P-1.
SWMU 21-016(d)	Delete from Table P-1

Summary of Requested Changes to Tables P-1, P-2, and P-3

SWMU/AOC	Requested Action
SWMU 21-016(e)	Delete from Table P-1
AOC 21-030	Delete from Table P-1.
SWMU C-21-001	Change “SWMU” to “AOC”.
SWMU 35-010(misc)	Delete from Table P-1.
SWMU 35-018(a)	Change “SWMU” to “AOC”.
SWMU 36-006	Add to Table P-1.
AOC 36-009	Delete from Table P-1.
AOC 39-002(a)	Change “AOC” to “SWMU”.
SWMU 40-003(a)	Delete from Table P-1.
SWMU 43-001(a2)	Change “SWMU” to “AOC”.
AOC 43-001(b1)	Delete from Table P-1.
SWMU 49-001(misc)	Delete from Table P-1.
AOC 50-003(a)	Delete from Table P-1.
SWMU 50-011(misc)	Delete from Table P-1.
AOC C-51-001	Delete from Table P-1.
AOC C-51-002	Delete from Table P-1.
AOC 52-002(g)	Delete from Table P-1.
AOC 52-003(a)	Add to Table P-1.
SWMU 54-001(a)	Delete from Table P-1.
AOC 54-001(b)	Delete from Table P-1.
AOC 54-001(d)	Delete from Table P-1.
AOC 54-001(e)	Delete from Table P-1.
AOC 54-002	Delete from Table P-1.
SWMU 54-007(misc)	Delete from Table P-1.
SWMU 54-009	Delete from Table P-1.
SWMU 54-014(misc)	Delete from Table P-1.

Summary of Requested Changes to Tables P-1, P-2, and P-3

SWMU/AOC	Requested Action
AOC 54-015(a)	Delete from Table P-1.
AOC 54-015(c)	Delete from Table P-1.
AOC 54-015(d)	Delete from Table P-1.
AOC 54-015(e)	Delete from Table P-1.
AOC 54-015(f)	Delete from Table P-1.
AOC 54-015(j)	Delete from Table P-1.
SWMU 54-017(misc)	Delete from Table P-1.
SWMU 54-019(misc)	Delete from Table P-1.
SWMU 54-020(misc)	Delete from Table P-1.
AOC 63-002	Delete from Table P-1.
AOC 73-007	Delete from Table P-1.
Table P-2	
AOC 03-001(i)	Add to Table P-2 with corrective action completed date of 10/13/2006.
Table P-3	
AOC 00-010(a)	Change corrective action completed date from 2/23/2006 to 1/26/2005.
AOC 00-029(a)	Change corrective action completed date from 2/23/2006 to 1/26/2005.
AOC 00-029(b)	Change corrective action completed date from 2/23/2006 to 1/26/2005.
AOC 00-029(c)	Change corrective action completed date from 2/23/2006 to 1/26/2005.
AOC 00-030(k)	Add to Table P-3 with corrective action completed date of 12/6/2006.
AOC 00-030(i)	Add corrective action completed date of 1/30/2002.
AOC 00-033(b)	Add to Table P-3 with corrective action completed date of 2/23/2006.
AOC 00-034(a)	Add to Table P-3 with corrective action completed date of 12/6/2006.

Summary of Requested Changes to Tables P-1, P-2, and P-3

SWMU/AOC	Requested Action
AOC 03-001(i)	Delete from Table P-3.
AOC C-06-003	Add corrective action completed date of 3/14/2000.
AOC C-06-006	Add corrective action completed date of 3/14/2000.
AOC C-06-007	Add corrective action completed date of 3/14/2000.
AOC C-06-008	Add corrective action completed date of 3/14/2000.
AOC C-06-009	Add corrective action completed date of 3/14/2000.
AOC C-06-010	Add corrective action completed date of 3/14/2000.
AOC C-06-011	Add corrective action completed date of 3/14/2000.
AOC C-06-012	Add corrective action completed date of 3/14/2000.
AOC C-06-013	Add corrective action completed date of 3/14/2000.
AOC C-06-014	Add corrective action completed date of 3/14/2000.
AOC C-06-015	Add corrective action completed date of 3/14/2000.
AOC C-06-016	Add corrective action completed date of 3/14/2000.
AOC C-06-017	Add corrective action completed date of 3/14/2000.
AOC C-06-018	Add corrective action completed date of 3/14/2000.
AOC C-06-020	Add corrective action completed date of 3/14/2000.
AOC C-06-021	Add corrective action completed date of 3/14/2000.
AOC 35-004(n)	Change corrective action completed date from 5/2/2001 to 1/26/2005. Change “SWMU” to “AOC”.
AOC 35-004(o)	Change corrective action completed date from 5/2/2001 to 1/26/2005.
SWMU 35-006	Add to Table P-3 with corrective action completed date of 5/2/2001.
SWMU 35-011(a)	Add to Table P-3 with corrective action completed date of 5/2/2001.
AOC 39-002(g)	Add corrective action completed date of 1/26/2005.
AOC 52-002(g)	Add to Table P-3 with corrective action completed date of 1/26/2005.

Summary of Requested Changes to Tables P-1, P-2, and P-3

SWMU/AOC	Requested Action
AOC 52-003(a)	Delete from Table P-3.
AOC 73-007	Add corrective action completed date of 3/28/2001.
AOC C-73-005(a)	Add corrective action completed date of 3/28/2001.
AOC C-73-005(b)	Add corrective action completed date of 3/28/2001.
AOC C-73-005(c)	Add corrective action completed date of 3/28/2001.
AOC C-73-005(d)	Add corrective action completed date of 3/28/2001.
AOC C-73-005(e)	Add corrective action completed date of 3/28/2001.
AOC C-73-005(f)	Add corrective action completed date of 3/28/2001.

Appendix M

Summary of Revised Unit Type Descriptions for Permit Attachment P- Listings of SWMUs and AOCs

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
Table P-1		
00-011(a)	Mortar impact area	Former Mortar Impact Area
00-018(a)	Sludge bed wastewater treatment plant, Pueblo Canyon	Former Sludge-Bed Wastewater Treatment Plant, Pueblo Canyon
00-018(b)	Sludge bed wastewater treatment plant, Bayo Canyon	Sludge-Bed Wastewater Treatment Plant
00-019	Wastewater treatment plant, central	Former Wastewater Treatment Plant, Central
00-030(a)	Septic system, DP Road	Former Septic Tank
00-030(b)	Former structures, 6th Street warehouse (SWMU Rpt: near intersection w/ Trinity)	Septic Tanks
00-030(d)	Septic System	Septic Tank
00-030(eN)	Septic System	Septic Tanks
00-030(eS)	Septic System	Septic Tank
00-030(f)	Septic System	Septic Tank
00-030(g)	Septic system (near old Catholic Church parking lot)	Former Septic Tank (Near Old Catholic Church Parking Lot)
00-030(h)	Septic System (near new Catholic Church)	Former Septic Tank (Near New Catholic Church)
00-030(j)	Septic System	Septic Tank
00-030(l)	Former structures, 6th Street warehouse (Zia Warehouses)	Septic Tank
00-030(m)	Former structures, 6th Street warehouse (Zia Warehouses)	Former Septic Tank
00-030(n)	Septic System	Former Septic Tank
00-030(o)	Septic System	Septic Tank
00-030(p)	Septic System	Septic Tank
00-031(a)	Soil Contamination beneath former Service Station	Soil Contamination From Former Service Station
00-031(b)	Soil Contamination beneath former motorpool (2 USTs)	Soil Contamination from Former Motorpool Facility
00-033(a)	Former UST, 6th Street Warehouses (as 0-033 on old permit)	Soil Contamination from Former UST, 6th Street warehouses
00-039	Underground tanks	Soil Contamination from Former USTs
C-00-042	Tank	Former Underground Storage Tank
C-00-043	Manhole (removed)	Former Manhole
01-001(d)	Septic Tank 138(hillside)	Soil Contamination from Septic Tank 138
01-001(o)	Ind. Or San. Wastewater Treatment	Waste Line
01-001(s)	Septic System Wasteline	Waste Line
01-001(t)	Septic System	Waste Line
01-001(u)	Septic System Wasteline	Waste Lines
01-002(a)-00	Waste Water Treatment Plant	Waste Lines
01-002(b)-00	Waste Water Treatment Plant	Outfall Associated with TA-01 (Located in Former TA-45)
01-003(a)	Bailey Bridge Landfill	Landfill
01-006(a)	Drainlines and Outfall	Drainline and Outfall
01-006(b)	Drainlines and Outfall	Drainline and Outfall
01-006(d)	Drainlines and Outfall	Drainline and Outfall
01-006(g)	Drainlines and Outfall	Storm Drains and Outfalls

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
01-006(h)	Drainlines and Outfall	Storm Drain and Outfall
01-006(n)	Drainlines and Outfall	Storm Drain and Outfall
01-006(o)	Drainlines and Outfall	Storm Drains and Outfalls
01-007(a)	Soil Contamination Area	Soil Contamination Associated with TA-01 Buildings and Structures
01-007(b)	Soil Contamination Area	Soil Contamination Associated with TA-01 Buildings and Structures
01-007(c)	Soil Contamination Area	Soil Contamination Associated with TA-01 Buildings and Structures
01-007(d)	Soil Contamination Area	Soil Contamination Associated with TA-01 Buildings and Structures
01-007(e)	Soil Contamination Area	Soil Contamination Associated with TA-01 Buildings and Structures
01-007(j)	Soil Contamination Area	Soil Contamination Associated with TA-01 Buildings and Structures
01-007(l)	Soil Contamination Area	Soil Contamination Associated with TA-01 Buildings and Structures
02-003(a)	Reactor facility	Soil Contamination Associated with Former Valve House and Gaseous Effluent Line
02-003(b)	Condensate trap	Soil Contamination Associated with Former Condensate Trap
02-003(c)	Delay system	Soil Contamination Associated with Former Delay System
02-003(d)	Gaseous effluent line	Soil Contamination Associated with Former Gaseous Effluent Line
02-003(e)	Holding tank (near reactor water boiler)	Soil Contamination Associated with Former Holding Tank (Near Water Boiler Reactor)
02-004(a)	Omega West reactor facility	Former Omega West Reactor Facility
02-004(b)	Reactor facility effluent storage tank TA-2-54	Former Reactor Facility Effluent Storage Tank
02-004(c)	Reactor facility effluent storage tank TA-2-55	Former Reactor Facility Effluent Storage Tank
02-004(d)	Reactor facility effluent storage tank TA-2-56	Former Reactor Facility Effluent Storage Tank
02-004(e)	Reactor facility acid pit TA-2-53	Former Reactor Facility Acid Pit
02-004(f)	Reactor facility equipment building	Former Reactor Facility Equipment Building
02-004(g)	Aboveground tank	Soil Contamination Associated with Former Aboveground Tank
02-005	Drift loss, cooling tower blowdown	Soil Contamination from Drift Loss, Cooling Tower Blowdown
02-006(a)	French drain	Former French Drain
02-006(b)	Acid waste line	Former Acid Waste Line
02-006(c)	Drainline	Former Drainline
02-006(e)	Waste line	Former Sump
02-007	Former structures, Omega West Reactor	Soil Contamination From Former Septic System
02-008(a)	Outfall (Same as 02-011(e))	Outfall from Structure 02-49
02-008(c)	Outfall	Outfall from Building 02-1
02-009(a)	Former structures, Omega West Reactor	Soil Contamination Associated with Former Water Boiler Reactor
02-009(b)	Former structures, Omega West Reactor	Soil Contamination Associated with Former

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
		Water Boiler Reactor
02-009(c)	Former structures, Omega West Reactor (Same as 02-003(e))	Soil Contamination Associated with Condensate Trap and Leach Field
02-009(d)	Non-intentional release (Same as 02-003(b))	Soil Contamination
02-009(e)	Non-intentional release	Soil Contamination [Duplicate of SWMU 02-009(c)]
02-010	Former building location	Soil Contamination Associated with Former Chemical Shack 02-3
02-011(a)	Storm drain and outfall	Storm Drains Associated with Former Building 02-1
02-011(b)	Storm drain and outfall	Former Drains
02-011(c)	Storm drain and outfall	Storm Drain
02-011(d)	Storm drain and outfall	Outfall from Building 02-44
02-011(e)	Storm drain and outfall (Same as 02-008(a))	Outfall from Structure 02-49 [duplicate of 02-008(a)]
02-012	Underground tanks	Soil Contamination from Former Underground Tanks
03-001(e)	Less-than-90-day storage	Storage Area
03-001(k)	Less-than-90-day-storage area	Storage Area
03-003(c)	Equipment storage area - PCB only site	Storage Area
03-003(d)	Storage area - transformers	Storage Area
03-003(e)	Storage area - transformers	Storage Area
03-003(f)	Storage area - transformers	Storage Area
03-003(g)	One-time spill - transformers	Storage Area
03-003(h)	Storage area - transformers	Storage Area
03-003(i)	Storage area - transformers	Storage Area
03-003(j)	Storage area - transformers	Storage Area
03-003(k)	Storage area - transformers	Storage Area
03-003(o)	Storage area - capacitor banks	Storage Area
03-009(a)	Asphalt batch plant	Surface Disposal Site
03-010(a)	Vacuum repair shop (former location)-systematic release site	Former Vacuum Repair Shop Outfall
03-011	Systematic product release	Operational Release
03-012(b)	Miscellaneous - TA-03 power plant	Operational Release
03-013(a)	Drainlines and outfalls	Storm Drain
03-013(b)	Operational release	Floor Drains
03-013(i)	Operational release	Operational Release from Former Buildings 03-246 and -247
03-014(a)	Wastewater treatment plant	Imhoff Tank Associated with Former WWTP
03-014(a2)	Wastewater treatment facility	Drain Associated with Former WWTP
03-014(b)	Wastewater treatment plant	Dosing Siphon Associated with Former WWTP
03-014(b2)	outfall	Outfall Associated with Former WWTP
03-014(c)	Wastewater treatment plant	Trickling Filter Associated with Former WWTP
03-014(c2)	outfall	Outfall Associated with Former WWTP
03-014(d)	Wastewater treatment plant	Clarifying Tank Associated with Former WWTP

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
03-014(e)	Wastewater treatment plant	Imhoff Tank Associated with Former WWTP
03-014(f)	Wastewater treatment plant	Dosing Siphon Associated with Former WWTP
03-014(g)	Wastewater treatment plant	Trickling Filter Associated with Former WWTP
03-014(h)	Wastewater treatment plant	Clarifying Tank Associated with Former WWTP
03-014(i)	Wastewater treatment plant	Splitter Box, Comminutor, and Bar Rack Associated with Former WWTP
03-014(j)	Wastewater treatment plant	Chlorination System Associated with Former WWTP
03-014(k)	Wastewater treatment plant	Sludge Drying Bed Associated with Former WWTP
03-014(l)	Wastewater treatment plant	Sludge Drying Bed Associated with Former WWTP
03-014(m)	Wastewater treatment plant	Sludge Drying Bed Associated with Former WWTP
03-014(n)	Wastewater treatment plant	Sludge Drying Bed Associated with Former WWTP
03-014(o)	Wastewater treatment plant	Sludge Drying Beds Associated with Former WWTP
03-014(p)	Wastewater treatment plant	Lift Station Associated with Former WWTP
03-014(q)	Miscellaneous - TA-03 power plant	Holding Tank
03-014(r)	Wastewater treatment facility	Lift Station Associated with Former WWTP
03-014(s)	Wastewater treatment facility	Lift Station Associated with Former WWTP
03-014(t)	Wastewater treatment facility	Lift Station Associated with Former WWTP
03-014(u)	Wastewater treatment plant	Holding Tank Associated with Former WWTP
03-014(v)	Wastewater treatment plant	Drain Associated with Former WWTP
03-014(w)	Wastewater treatment plant	Drain Associated with Former WWTP
03-014(x)	Wastewater treatment plant	Drain Associated with Former WWTP
03-014(y)	Wastewater treatment plant	Drain Associated with Former WWTP
03-014(z)	Wastewater treatment plant	Drain Associated with Former WWTP
03-015	Drainlines and outfalls	Outfall
03-021	Surface disposal site	Outfall from Building 03-170
03-022	Sump	Former Sump
03-025(b)	Sumps (two, inactive and active)	Sumps
03-025(c)	Tank and/or associated equipment	Oil/Water Separator
03-026(c)	Tank and/or associated equipment	Tanks
03-026(d)	Tank and/or associated equipment	Sump
03-027	Separation Site	Lift Wells
03-028	Asphalt batch plant	Surface Impoundment
03-029		Landfill
03-031	Tank and/or associated equipment	Tanks and Associated Equipment
03-033	Sump	Former Tanks and Sumps
03-036(a)	Asphalt batch plant	Soil Contamination from Former Aboveground Tanks
03-036(b)	Aboveground tanks	Former Aboveground Tanks
03-036(c)	Asphalt batch plant	Soil Contamination from Former

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
		Aboveground Tank [Duplicate of 03-043(f)]
03-036(d)	Asphalt batch plant	Soil Contamination from Former Underground Tank [Duplicate of 03-043(g)]
03-037	Underground tank	Underground Tanks
03-038(a)	Tanks and/or associated equipment	Soil Contamination from Former Building 03-700
03-038(b)	Tanks and/or associated equipment	Soil Contamination from Former Acid Tank
03-038(f)	Waste lines	Drainline
03-042	Sump	Soil Contamination from Former Sump
03-043(a)	Aboveground Tank	Soil Contamination from Former Aboveground Tank
03-043(b)	Aboveground Tank	Soil Contamination from Former Aboveground Tank
03-043(c)	Tank and/or associated equipment	Soil Contamination from Former Manhole
03-043(d)	Aboveground Tank	Soil Contamination from Former Aboveground Tank
03-043(f)	Aboveground Tank	Soil Contamination from Former Aboveground Tank
03-043(g)	Aboveground Tank	Soil Contamination from Former Underground Tank
03-043(h)	Aboveground Tank	Soil Contamination from Former Aboveground Tank
03-045(a)	Outfall (industrial or sanitary wastewater treatment)	Outfall from Building 03-22
03-045(b)	Miscellaneous - TA-03 power plant	Operational Release
03-045(c)	Miscellaneous - TA-03 power plant	Outfall from Structure 03-285
03-045(e)	Outfall (industrial or sanitary wastewater treatment)	Outfall from Building 03-57
03-045(f)	Outfall from drain (industrial or sanitary wastewater treatment)	Outfall from Building 03-223
03-045(g)	Asphalt batch plant	Storm Drain
03-045(h)	Drainlines and outfalls	Outfall from Cooling Tower 03-187
03-047(d)	Storage area	Soil Contamination from Former Storage Area
03-047(g)	Drum storage	Soil Contamination from Former Storage Area
03-049(a)	Drainlines and outfalls	Outfall from Cooling Tower 03-127 and Building 03-66
03-049(b)	Miscellaneous	Soil Contamination from Discharge Area
03-050(a)	Soil contamination	Soil Contamination from TA-03 Exhaust Emissions
03-050(d)	Soil contamination	Soil Contamination from TA-03 Exhaust Emissions
03-050(f)	Soil contamination	Soil Contamination from TA-03 Exhaust Emissions
03-050(g)	Soil contamination	Soil Contamination from TA-03 Exhaust Emissions
03-051(a)	Soil contamination-oil from leaking compressor	Soil Contamination from Leaking Compressor
03-051(b)	Soil contamination-oil from leaking compressor	Soil Contamination from Leaking Compressor
03-051(c)	Soil contamination (vacuum pump leaking)	Soil Contamination from Vacuum Pump Leaking

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
03-052(a)	Drainlines and outfalls	Storm Drain
03-052(e)	Drainlines and outfalls	Storm Drain
03-052(f)	Drainlines and outfalls	Outfall from Building 03-38
03-053	Operational facility	Building 03-141 Basement Area and Floor Drains
03-054(a)	Drainlines and outfalls	Outfall Associated with Cooling Tower 03-19
03-054(b)	Drainlines and outfalls	Outfall from Building 03-38
03-054(c)	Outfall	Outfall from Former Cooling Tower 03-156
03-054(d)	Drainlines and outfalls	Outfall from Building 03-16
03-054(e)	Outfall	Outfall from Building 03-29
03-055(a)	Outfall	Outfall from Building 03-16
03-055(c)	Outfall	Outfall Associated with Drains of Fire Station 03-41
03-056(a)	Storage area	Oil Storage Facility
03-056(c)	Transformer storage area - PCB only site	Transformer Storage Area
03-056(d)	Wastewater treatment plant	Drum Storage
03-056(h)	Transformer storage area	Storage Area
03-056(l)	Drum Storage	Container Storage Area
C-03-006	One-time spill	Spill/Non-Intentional Release Area
C-03-014	Storage area	Equipment Storage Area
C-03-016	Oil metal bin	Former Oil Metal Bin
C-03-022	Kerosene tanker trailer	Former Kerosene Tanker Trailer
04-001	Firing site - Alpha Site	Firing Site
04-002	Firing site - Alpha Site	Surface Disposal Site
04-003(a)	Alpha Site Photoprocessing Building, drainlines, and outfall	Outfall Associated with Former Photoprocessing Building 04-07
04-003(b)	Firing site - Alpha Site	Drainline and Outfall from Former Building 04-03
04-004	Soil contamination beneath buildings	Soil Contamination from Former Photoprocessing Building 04-07
05-001(a)	Firing site - Beta Site	Firing Site
05-001(b)	Firing site - Beta Site	Firing Site
05-001(c)	Former firing site	Firing Site
05-002	Firing site - Beta Site	Canyonside Disposal Site
05-004	Septic System	Septic Tank
05-005(a)	French Drain	Soil Contamination from Former French Drain
05-005(b)	Outfall	Outfall Associated with Former Building 05-05
05-006(b)	Soil Contamination	Soil Contamination from Former Building 05-04
05-006(c)	Soil Contamination	Soil Contamination from Former Building 05-05
05-006(e)	Soil Contamination	Soil Contamination from Former Building 05-19
05-006(h)	Soil contamination	Soil Contamination from Former Building 05-09
06-002	Firing site - eastern aggregate	Septic System

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
06-003(a)	Former firing site	Firing Site
06-003(c)	Firing site - eastern aggregate	Firing Site
06-003(d)	Firing site (inactive)	Firing Site
06-003(e)	Firing site (inactive)	Firing Site
06-003(f)	Firing site (inactive)	Firing Site
06-003(h)	Firing site (inactive)	Firing Site
06-005	MDA F	Firing Site
06-007(a)	Material disposal area (MDA F)	MDA F
06-007(b)	Material disposal area (MDA F)	Landfill
06-007(c)	Material disposal area (MDA F)	Landfill
06-007(d)	Material disposal area (MDA F)	Landfill
06-007(e)	Material disposal area (MDA F)	Landfill
06-007(g)	Building and surface disposal	Soil Contamination from Former Building 06-12
06-008	Underground tank	Soil Contamination from Former Underground Storage Tank
C-06-001	Building	Soil Contamination from Former Storage Magazine 06-4
C-06-005	Building TA-6-13 - chemistry laboratory, assembly, and storage	Soil Contamination from Former Building 06-13
C-06-019	Building	Soil Contamination from Former Building 06-38
07-001(a)	Former firing sites	Firing Site
07-001(b)	Former firing sites	Firing Site
07-001(c)	Former firing sites	Firing Site
07-001(d)	Former firing sites	Firing Site
08-001(a)	Buildings	Off-Gas System
08-001(b)	Buildings	Off-Gas System
08-003(a)	Septic system, drainlines, and outfall	Former Septic Tank
08-004(a)	Septic system, drainlines, and outfall	Floor Drain
08-004(b)	Septic system, drainlines, and outfall	Drainline
08-004(c)	Floor drain	Floor Drain and Sumps
08-005	Container storage area	Former Storage Vessel
08-006(a)	Material disposal area (MDA Q)	MDA Q
08-009(a)	Septic system, drainlines, and outfall	Drainline and Outfall
08-009(c)	Storm drain and outfall	Storm Drain and Outfall from Building 08-23
08-009(d)	Industrial or sanitary wastewater treatment	Drains
08-009(e)	Industrial or sanitary wastewater treatment	Outfall from Building 08-21
08-009(f)	Outfall	Outfall Associated with Building 08-22
C-08-014	Laboratory	Laboratory and Administrative Building 08-21
09-001(a)	Former firing site structures	Soil Contamination from Firing Site and Former Firing Site Structure 09-04
09-001(b)	Former firing site structures	Firing Site
09-001(c)	Firing sites (inactive)	Firing Site
09-001(d)	Firing sites (inactive)	Firing Site
09-003(a)	Settling tanks and basket pit associated with 9-14	Soil Contamination Associated with Former Settling Tank

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
09-003(b)	Settling tanks and basket pit associated with 9-14	Soil Contamination Associated with Former Settling Tank
09-003(d)	Settling tank	Potential Soil Contamination Associated with Former Settling Tank
09-003(e)	Settling tanks and basket pit associated with 9-14	Soil Contamination Associated with Former Basket Pit
09-003(g)	Sumps and pipes	Soil Contamination Associated with Former Sump and Pipes
09-003(h)	Sumps and pipes	Soil Contamination Associated with Former Sump and Pipes
09-003(i)	Sumps and pipes	Soil Contamination Associated with Former Sump and Pipes
09-004(a)	Settling tanks	Settling Tank
09-004(b)	Settling tanks	Settling Tank
09-004(c)	Settling tanks	Settling Tank
09-004(d)	Settling tanks	Settling Tank
09-004(e)	Settling tanks	Settling Tank
09-004(f)	Settling tanks	Settling Tank
09-004(h)	Settling tanks	Settling Tank
09-004(i)	Settling tanks	Settling Tank
09-004(j)	Settling tanks	Settling Tank
09-004(k)	Settling tanks	Settling Tank
09-004(l)	Settling tanks	Settling Tank
09-004(m)	Settling tanks	Settling Tank
09-004(n)	Settling tanks	Settling Tank
09-005(a)	Septic tank and sewage oxidation pond	Soil Contamination from Former Septic Tank
09-005(d)	Septic tank and sewage oxidation pond	Septic Tank
09-005(g)	Septic system	Settling Tank
09-006	Septic system	Soil Contamination Associated with Former Septic Tank
09-008(b)	Septic tank and sewage oxidation pond	Oxidation Pond
09-013	Material disposal area (MDA M)	MDA M
09-014	Firing site (formerly 23-001)	Soil Contamination Associated with Former Camera Mount
C-09-001	Soil contamination	Soil Contamination Associated with Outfall
10-001(a)	Firing sites (inactive)	Firing Site
10-001(b)	Firing sites (inactive)	Firing Site
10-001(c)	Firing sites (inactive)	Firing Site
10-001(d)	Firing sites (inactive)	Firing Site
10-002(a)	Former liquid disposal complex	Disposal Pit
10-002(b)	Former liquid disposal complex	Disposal Pit
10-003(a)	Former liquid disposal complex	Soil Contamination from Former Disposal Pit
10-003(b)	Former liquid disposal complex	Soil Contamination from Former Disposal Pit
10-003(c)	Former liquid disposal complex	Soil Contamination from Former Disposal Pit
10-003(d)	Former liquid disposal complex	Soil Contamination from Former Disposal Pit
10-003(e)	Former liquid disposal complex	Soil Contamination from Disposal Pit
10-003(f)	Former liquid disposal complex	Soil Contamination from Former Disposal Pit

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
10-003(g)	Former liquid disposal complex	Soil Contamination from Former Manhole
10-003(h)	Former liquid disposal complex	Soil Contamination from Former Manhole
10-003(i)	Former liquid disposal complex	Soil Contamination from Former Septic Tank
10-003(j)	Former liquid disposal complex	Soil Contamination from Former Tank
10-003(k)	Former liquid disposal complex	Soil Contamination from Former Tank
10-003(l)	Former liquid disposal complex	Soil Contamination from Former Tank
10-003(m)	Former liquid disposal complex	Soil Contamination from Former Waste Line
10-003(n)	Former liquid disposal complex	Soil Contamination from Former Leach Field
10-003(o)	Former liquid disposal complex	Soil Contamination from Decontamination Holes Associated with Former Leach Field
10-004(a)	Septic tank	Soil Contamination from Former Septic Tank
10-004(b)	Former liquid disposal complex	Septic System
10-005	Firing sites (inactive)	Surface Disposal
10-007	Former liquid disposal complex	Landfill
10-008	Firing sites (inactive)-New SWMU	Tree Rimmed Firing Point, Bayo Canyon
10-009	Former Bayo Landfill-New SWMU	Former Bayo Canyon Landfill
C-10-001	Burn Site	Contaminated Soil, Bayo Canyon
11-001(a)	Firing site (inactive)	Firing Site
11-001(b)	Firing site (inactive)	Firing Site
11-001(c)	Firing site (inactive)	Firing Site
11-002	Former firing site	Burn Site
11-003(b)	Firing range	Air Gun
11-004(a)	Drop test tower and related structures	Drop Tower
11-004(b)	Drop test tower and related structures	Concrete Pad
11-004(c)	Drop test tower and related structures	Hoist
11-004(d)	Drop test tower and related structures	Hoist
11-004(e)	Drop test tower and related structures	Drop Pad
11-004(f)	Drop test tower and related structures	Drop Pad
11-005(c)	Industrial or sanitary wastewater treatment	Outfall from Former Building 11-2
11-006(a)	Former firing site	Sump
11-006(b)	Former firing site	Catch Basin System
11-006(c)	Former firing site	Catch Basin System
11-006(d)	Former firing site	Catch Basin System
11-009	Material disposal area (MDA S)	MDA S
11-011(a)	Industrial or sanitary wastewater treatment	Outfall from Building 11-30
11-011(b)	Industrial or sanitary wastewater treatment	Outfall from Building 11-30A
11-011(d)	Industrial or sanitary wastewater treatment	Outfall from Building 11-24
11-012(a)	Building	Soil Contamination Associated with Former Structure 11-7
11-012(b)	Building	Soil Contamination Associated with Former Storage Magazine 11-8
11-012(c)	Building	Soil Contamination Associated with Former Storage Structure 11-9
11-012(d)	Building	Soil Contamination Associated with Former Shelter 11-10
C-11-001	Laboratory	Soil Contamination from Former Building 11-05

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
C-11-002	Laboratory	Soil Contamination Associated with Former Structure 11-12
12-001(a)	Former firing site	Firing Site Steel-lined Chamber
12-001(b)	Former firing site	Firing Site
12-002	Former firing site	Burn Site
C-12-001	Trim Building	Soil Contamination Associated with Former Trim Building 12-1
C-12-002	Control Building	Soil Contamination Associated with Former Control Building 12-2
C-12-003	Storage Magazine	Soil Contamination Associated with Former Storage Magazine 12-3
C-12-004	Generator Building	Soil Contamination Associated with Former Generator Building 12-5
C-12-005	Junction box	Soil Contamination Associated with Former Junction Box 12-06
13-001	Firing site, landfill, and soil contamination	Firing Site
13-002	Firing site, landfill, and soil contamination	Landfill
13-003(a)	TA-13 septic system (inactive)	Soil Contamination from a Former Septic Tank
13-003(b)	Septic System	Drainfield
14-001(a)	Firing site - active	Firing Site
14-001(b)	Firing site - active	Firing Site
14-001(c)	Firing site - active	Firing Site
14-001(d)	Firing site - active	Firing Site
14-001(e)	Firing site - active	Firing Site
14-001(g)	Firing site - open burn/open detonation (active)	Firing Site
14-002(a)	Former firing site	Firing Site
14-002(b)	Former firing site	Firing Site
14-002(c)	Former firing site	Control Building 14-5
14-002(d)	Former firing site	Firing Site
14-002(e)	Former firing site	Firing Site
14-002(f)	Former firing site	Soil Contamination Associated with Former Junction Box 14-12
14-004(a)	Storage area (still active)	Storage Area
14-005	Incinerator (active)	Incinerator
14-006	Tank and/or associated equipment	Sump and/or Associated Equipment
14-009	Former firing site	Surface Disposal Site
14-010	Former firing site	Soil Contamination from Former Sump and Drainlines
C-14-001	Magazine	Soil Contamination Associated with Former Magazine 14-1
C-14-002	Control Building	Soil Contamination Associated with Former Building 14-03
C-14-003	HE-Preparation Building	Soil Contamination Associated with Former Structure 14-4
C-14-004	Electronics Shop	Soil Contamination Associated with Former Electronics Shop 14-7
C-14-005	Storage Building	Soil Contamination Associated with Former Storage Building 14-8

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
C-14-006	Magazine	Soil Contamination Associated with Former Magazine 14-9
C-14-007	Storage Building	Soil Contamination Associated with Former Storage Building 14-10
C-14-008	Magazine	Soil Contamination from Former Magazine 14-11
C-14-009	Magazine	Soil Contamination Associated with Former Magazine 14-13
15-001	Surface disposal	Surface Disposal Site
15-002	Firing site - R40	Burn Site
15-004(a)	Firing Site C (inactive)	Firing Site C
15-004(b)	Firing sites A and B (inactive)	Firing Site A
15-004(c)	Firing sites A and B (inactive)	Firing Site B
15-004(d)	Firing site C (inactive)	Firing Site C
15-004(f)	Firing site E-F (inactive)	Firing Site E-F
15-004(g)	Firing site G (inactive)	Firing Site G
15-004(h)	Firing site H (inactive)	Firing Site H
15-004(i)	The Gulch firing site (inactive)	The Gulch- Firing Site
15-006(b)	Firing Site Ector (active)	Firing Site Ector
15-006(c)	R-44 firing site (inactive)	Firing Site (R-44)
15-006(d)	R-45 firing site	Firing Site (R-45)
15-006(e)	I-J Firing Site at TA-36 (not TA-15), part of 36-004(e)	I-J Site at TA-36, Duplicate of C-36-006(e)
15-007(a)	Firing site - R40	MDA N
15-007(b)	Material disposal area (MDA Z) landfill	MDA Z
15-007(c)	Shafts	Shaft
15-007(d)	Shafts	Shaft
15-008(a)	Firing site E-F (inactive)	Surface Disposal Site (E-F Site)
15-008(b)	R-44 firing site (inactive)	Surface Disposal Site
15-008(c)	Firing site G (inactive)	Surface Disposal Site
15-008(d)	Surface disposal	Surface Disposal Site
15-008(f)	I-J Firing site mounds	I-J Firing Site Mounds at TA-36
15-008(g)	Surface disposal	Surface Disposal Site
15-009(a)	Former structures - the Hollow	Septic System
15-009(c)	Septic tank	Septic System
15-009(e)	Septic system, E/F Site	Septic System
15-009(f)	Firing site and septic systems	Firing Site Septic System
15-009(g)	Septic tank (active)	Septic System
15-009(h)	Septic tank	Septic System
15-009(i)	Septic tank	Septic System
15-009(k)	Firing site and septic systems	Firing Site Septic System
15-011(a)	Former structures - the Hollow	Concrete Trench Drains
15-011(b)	Former structures - the Hollow	Drainage Channel
15-011(c)	Former structures - the Hollow	Outfall
15-014(a)	Outfalls	Outfalls from Building 15-183
15-014(b)	Outfalls	Outfall from Building 15-183

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
15-014(d)	Ind. or san. wastewater treatment	Drainage
15-014(g)	Industrial or sanitary wastewater treatment	Outfall from Building 15-203
15-014(h)	Outfall	Outfalls from Building 15-40
15-014(i)	Former structures - the Hollow	Outfall from Former Building 15-194
15-014(j)	Former structures - the Hollow	Outfalls from Former Building 15-50
15-014(k)	Former structures - the Hollow	Outfall Associated with Former Building 15-20
15-014(l)	NPDES-permitted outfall (active)	Outfall from Building 15-202
C-15-001	Surface disposal	Contaminated Soil Near Firing Site
C-15-004	Transformers	Former Transformer Station
C-15-005	Former laboratory and building	Soil Contamination Associated with Former Laboratory and Building
C-15-006	Building	Soil Contamination Associated with Former Building 15-7
C-15-007	Non-intentional release	Non-intentional Release Area
16-001(a)	Former steam plant	Tank
16-001(b)	Former steam plant	Dry Wells
16-001(c)	Former steam plant	Tank
16-001(e)	Sumps and associated dry well	Dry Well
16-003(c)	Sump, associated drainline, and outfall	Sump
16-003(d)	Sumps and associated dry well	Sumps
16-003(e)	Sumps and associated dry well	Sumps
16-003(f)	Sumps and associated dry well	Sumps
16-003(g)	Sumps and associated dry well	Sumps
16-003(h)	Inactive sump, drainline, and outfall	Sump
16-003(i)	Sump 16-265	Sump
16-003(j)	Sump 16-267	Sump
16-003(k)	16-260 Sumps, drainlines, and outfall	Sumps
16-003(l)	Sumps, drainlines, and outfalls (inactive)	Sumps
16-003(m)	Sump, outfall, and septic system	Sump
16-003(n)	HE sump	Sump
16-003(o)	Sump- fish ladder	Sumps
16-003(p)	Sump, drainlines, and outfall	Sump
16-003(q)	Sump and drainlines	Sump
16-004(a)	Wastewater treatment plant	Imhoff Tank
16-004(b)	Wastewater treatment plant	Trickling Filter
16-004(c)	Wastewater treatment plant	Tank
16-004(d)	Wastewater treatment plant	Sludge Drying Bed
16-004(e)	Wastewater treatment plant	Screen
16-004(f)	Wastewater treatment plant	Sludge Drying Bed
16-005(c)	Former structures, 40s-Line	Soil Contamination from Former Septic Tank
16-005(d)	Septic tank	Soil Contamination from Former Septic Tank
16-005(e)	Septic tank	Soil Contamination from Former Septic Tank
16-005(g)	Former burn ground structures	Soil Contamination from Former Filter Bed
16-005(h)	Septic tank	Soil Contamination from Former Septic Tank
16-005(j)	Former structures, T-Site (formerly 24-001)	Soil Contamination from Former Septic Tank

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
16-005(k)	Septic tank	Soil Contamination from Former Septic Tank
16-005(m)	Former structures, T-Site (formerly 24-001)	Soil Contamination from a Former Sump
16-005(n)	Septic system	Soil Contamination from Former Septic Tank
16-006(a)	Septic system	Septic Tank
16-006(c)	Septic system	Septic Tank
16-006(d)	Sump, outfall, and septic system	Septic Tank
16-006(e)	Burn ground	Former Septic Tank
16-006(g)	V-Site: Buildings 16-100, 16-515 and associated structures (formerly 25-002)	Septic Tank
16-006(h)	V-Site courtyard (formerly 25-002)	Pump Pit
16-007(a)	Machining buildings and settling ponds	Settling Ponds
16-008(a)	90s-Line: 16-89, 16-90, 16-91, 16-92, 16-93	Settling Pond
16-009(a)	Burn site	Former Burn Site
16-010(a)	Burn ground	Burn Site
16-010(h)	Former burn ground structures	Former Basket-Wash Facility
16-010(i)	Former burn ground structures	Burn Pad
16-010(k)	Former burn ground structures	Former Trough
16-010(l)	Former burn ground structures	Former Trough
16-010(m)	Former burn ground structures	Former Trough
16-010(n)	Former burn ground structures	Former Trough
16-011	Incinerator	Former Incinerator
16-013	V-Site courtyard	Container Storage Area
16-015(a)	Men's locker room and laundry facility	Soil Contamination from Former Men's Locker Room and Laundry Facility
16-015(b)	Steam-washing facility	Soil Contamination Associated with Former Steam-Washing Facility
16-015(c)	Operation facility	Soil Contamination from Former Building 16-36
16-015(d)	Building footprints, drainlines, and sumps	Soil Contamination from Former Steam Cleaning Building 16-51
16-016(b)	Landfill	Surface Disposal Site
16-016(c)	Burn ground	Soil Contamination from Former Barium Nitrate Storage Area/Pile
16-016(f)	Landfill	Surface Disposal Site
16-017(a)-99	Former structures	Soil Contamination from Former HE Machining Building 16-92
16-017(b)-99	Former structures	Soil Contamination from Former HE Machining Building 16-93
16-017(c)-99	Former structures	Soil Contamination from Former HE Machining Building 16-91
16-017(d)-99	Former structures	Soil Contamination from Former HE Machining Building 16-90
16-017(e)-99	Former structures	Soil Contamination from Former HE Machining Building 16-89
16-017(f)-99	Former structures	Soil Contamination from Former HE Machining Building 16-99
16-017(g)-99	Former structures	Former Storage Magazine
16-017(h)-99	Former structures	Soil Contamination from Former HE Casting Building 16-27

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
16-017(i)	Former structures	Former Storage Building
16-017(j)-99	Former structures	Former Storage Magazine 16-63
16-017(k)-99	Former structures	Former Storage Magazine 16-78
16-017(l)-99	Former structures	Former Storage Magazine 16-77
16-017(m)-99	Former structures	Former Storage Magazine 16-76
16-017(n)-99	Former structures	Former Storage Magazine 16-75
16-017(o)-99	Former structures	Former Storage Magazine 16-59
16-017(p)-99	Former structures	Former Storage Magazine 16-61
16-017(q)-99	Former structures	Storage Magazine
16-017(r)-99	Former structures	Former Assembly Site/Storage Building 16-520
16-017(s)-99	Former structures	Former Assembly Site/Storage Building 16-519
16-017(t)-99	Former structures	Laboratory/Equipment Storage Building 16-516
16-017(u)-99	Former structures	Soil Contamination from Former Storage and Support Structure 16-164
16-017(v)-99	Former structures	Soil Contamination from Former HE Processing Building
16-017(w)-99	Former structures	Former Storage Magazine 16-73
16-017(x)-99	Former structures	Soil Contamination from Former Storage Magazine 16-79
16-019	Material disposal area (MDA R)	MDA R
16-020	Silver recovery unit	Outfall from Former Building 16-222
16-021(a)	Sump and Outfall, 16-450	Operational Release Associated with Building 16-450
16-021(b)	Systematic leak	Operational Release
16-021(c)	16-260 Sumps, drainlines, and outfall	Outfall Associated with Building 16-260
16-022(a)	Underground Tank	Former Underground Storage Tank
16-022(b)	Underground Tank	Former Underground Storage Tank
16-023(b)	Incinerator	Soil Contamination from Former Incinerator
16-024(a)	Magazine	Soil Contamination from Former Magazine 16-488
16-024(b)	Magazine	Soil Contamination from Former Magazine 16-74
16-024(c)	Magazine	Soil Contamination from Former Magazine 16-30
16-024(d)	Magazine	Soil Contamination from Former Magazine 16-34
16-024(e)	Machining buildings and settling ponds	Soil Contamination from Former Magazine 16-33
16-024(f)	Magazine	Soil Contamination from Former Magazine 16-493
16-024(g)	Magazine	Soil Contamination from Former Magazine 16-494
16-024(h)	Magazine	Soil Contamination from Former Magazine 16-497
16-024(i)	Magazine	Soil Contamination from Former Magazine 16-64
16-024(j)	Magazine	Soil Contamination from Former Magazine

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
		16-65
16-024(k)	Magazine	Soil Contamination from Former Magazine 16-57
16-024(l)	Magazine	Soil Contamination from Former Magazine 16-72
16-024(m)	Magazine	Soil Contamination from Former Magazine 16-66
16-024(n)	Magazine	Soil Contamination from Former Magazine 16-84
16-024(o)	Magazine	Soil Contamination from Former Magazine 16-67
16-024(p)	Magazine	Soil Contamination from Former Magazine 16-70
16-024(q)	Magazine	Soil Contamination from Former Magazine 16-71
16-024(r)	Magazine	Soil Contamination from Former Magazine 16-68
16-024(s)	Magazine	Soil Contamination from Former Magazine 16-60
16-024(t)	Operation facility	Soil Contamination from Former Magazine 16-464
16-024(u)	Magazine	Soil Contamination from Former Magazine 16-481
16-024(v)	Magazine	Soil Contamination from Former Magazine 16-62
16-025(a)	Abandoned radiograhy building, 16-39	Soil Contamination from Former Radiography Building 16-39
16-025(a2)	Building footprints, drainlines, and sumps	Soil Contamination from Former HE Casting Building 16-50
16-025(b)	Abandoned radiography building, 16-40	Soil Contamination from Former Radiography Building 16-40
16-025(b2)	Building footprints, drainlines, and sumps	Soil Contamination from Former HE Casting Building 16-52
16-025(c2)	Abandoned building, 16-56	Soil Contamination from Former Building 16-56
16-025(d)	HE machining line buildings and associated structures	Soil Contamination from Former Equipment and Control Building 16-94
16-025(d2)	Abandoned building, 16-480	Soil Contamination from Former Structure 16-480
16-025(e)	Machining buildings and settling ponds	Soil Contamination from Former HE Machining Building 16-31
16-025(f)	Machining buildings and settling ponds	Soil Contamination from Former HE Machining Building 16-32
16-025(g)	HE machining line buildings and associated structures	Soil Contamination from Former HE Machining Building 16-95
16-025(h)	HE machining line buildings and associated structures	Soil Contamination from Former HE Machining Building 16-96
16-025(i)	HE machining line buildings and associated structures	Soil Contamination from Former HE Machining Building 16-97
16-025(j)	HE machining line buildings and associated structures	Soil Contamination from Former HE Machining Building 16-98
16-025(k)	20s-Line and associated structures	Soil Contamination from Former HE Powder Inspection Building 16-25

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
16-025(l)	20s-Line and associated structures	Soil Contamination from Former HE Casting Building 16-26
16-025(m)	Former structures, T-Site	Soil Contamination from Former X-Ray Hutment 16-495
16-025(n)	Former structures, T-Site	Soil Contamination from Former X-Ray Hutment 16-499
16-025(o)	Former structures, T-Site	Soil Contamination from Former X-Ray Hutment 16-500
16-025(p)	Former structures, 40s-Line	Soil Contamination from Former HE Processing Building 16-44
16-025(q)	Former structures, 40s-Line	Soil Contamination from Former HE Processing Building 16-45
16-025(r)	Former structures, 40s-Line	Soil Contamination from Former Rest House 16-46
16-025(s)	Former structures, 40s-Line	Soil Contamination from Former Radium Source Building 16-48
16-025(t)	Experimental casting building, associated drainlines and sumps	Soil Contamination from Former HE Equipment Casting Building 16-38
16-025(u)	Former structures, 40s-Line	Soil Contamination from Former HE Processing Building 16-42
16-025(v)	Former structures, 40s-Line	Soil Contamination from Former HE Processing Building 16-81
16-025(w)	Abandoned building, 16-81	Soil Contamination from Former Building 16-81
16-025(x)	V-Site: Buildings 16-100, 16-515 and associated structures	Soil Contamination from Former Electroplating Laboratory 16-100
16-025(y)	Former building	Soil Contamination from Former HE Grinding Facility 16-55
16-025(z)	Former structures	Soil Contamination from Former HE Explosives Testing Building 16-37
16-026(a)	Outfall	Outfall from Building 16-370
16-026(b)	300s-Line (west side) sumps and outfalls	Outfall from Structure 16-307
16-026(b2)	Outfalls	Outfall from Building 16-202 Drain
16-026(c)	300s-Line (west side) sumps and outfalls	Outfall from Structure 16-305
16-026(c2)	Outfall, 16-462	Outfall from Building 16-462
16-026(d)	300s-Line (west side) sumps and outfalls	Outfall from Structure 16-303
16-026(e)	300s-Line (west side) sumps and outfalls	Outfall from Structure 16-301
16-026(f)	Outfall	Outfalls from Building 16-308
16-026(g)	Outfall	Outfall from Building 16-280
16-026(h2)	Sump and outfall, 16-360	Outfall Associated with Building 16-360
16-026(i)	Outfall	Outfall from Former Building 16-224
16-026(j)	Outfall, 16-226	Outfall from Former Building 16-226
16-026(j2)	Outfall	Outfall from Former Building 16-345
16-026(k2)	16-260 Bay 25 outfalls	Outfall from Building 16-260
16-026(l)	Drainlines and outfall	Outfalls Associated with Building Former Building 16-220
16-026(m)	90s-Line: 16-89, 16-90, 16-91, 16-92, 16-93	Outfall Associated with Former Building 16-92
16-026(n)	90s-Line: 16-89, 16-90, 16-91, 16-92, 16-93	Outfall Associated with Former Building 16-91
16-026(o)	90s-Line: 16-89, 16-90, 16-91, 16-92, 16-93	Outfall Associated with Former Building 16-

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
		90
16-026(p)	90s-Line: 16-89, 16-90, 16-91, 16-92, 16-93	Outfall Associated with Former Building 16-89
16-026(q)	20s-Line and associated structures	Outfall from Former Building 16-27
16-026(r)	Outfall, 16-180	Outfall from Building 16-180 Drain
16-026(s)	Outfall, 16-5	Outfall from Building 16-05
16-026(u)	Outfall, 16-195	Outfall from Building 16-195 Drain
16-026(v)	Sump, associated drainline, and outfall	Outfall from Building 16-460
16-026(w)	Former structures, 40s-Line	Outfall from Former Building 16-45
16-026(y)	Outfall	Outfall from Building 16-411
16-026(z)	Outfall	Outfall from Building 16-306
16-028(a)	South drainage channel	Drainage Channel
16-028(b)	Industrial or sanitary wastewater treatment, 16-370	Outfall from Building 16-370
16-028(c)	Drainlines and outfall	Outfall from Former Building 16-220
16-028(d)	Outfalls	Outfall from Building 16-202
16-028(e)	Sump and Outfall, 16-450	Outfall Associated with Building 16-450
16-029(a)	300s-Line (west side) sumps and outfalls	Sumps
16-029(a2)	Former building	Sump
16-029(b)	300s-Line (west side) sumps and outfalls	Sumps
16-029(b2)	Former structures (GMX-2 HE processing building)	Sump
16-029(c)	300s-Line (west side) sumps and outfalls	Sumps
16-029(c2)	Former structures	Sumps
16-029(d)	300s-Line (west side) sumps and outfalls	Sumps
16-029(d2)	Building footprints, drainlines, and sumps	Sumps
16-029(e)	Sump and outfall, 16-360	Sump
16-029(e2)	Building footprints, drainlines, and sumps	Sumps
16-029(f)	Sump from building 16-345	Sump
16-029(f2)	20s-Line and associated structures	Soil Contamination from Former Sump and Outfall from Former Building 16-24
16-029(g)	Sump and Outfall, 16-450	Former Sump
16-029(g2)	V-Site courtyard	Pit
16-029(h)	Sump, drainlines, and outfall	Outfalls from Former Building 16-478
16-029(h2)	HE machining line buildings and associated structures	Soil Contamination from Former Manhole Associated with Former Buildings 16-95, -96, -97, and -98
16-029(i)	HE sump	Sump
16-029(j)	16-260 Bay 25 outfalls	Sump
16-029(k)	90s-Line: 16-89, 16-90, 16-91, 16-92, 16-93	Sumps
16-029(l)	90s-Line: 16-89, 16-90, 16-91, 16-92, 16-93	Sumps
16-029(m)	HE machining line buildings and associated structures	Soil Contamination from Former Sump
16-029(n)	HE machining line buildings and associated structures	Soil Contamination from Former Sump
16-029(o)	HE machining line buildings and associated structures	Soil Contamination from Former Sump
16-029(p)	HE machining line buildings and associated	Soil Contamination from Former Sump

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
	structures	
16-029(q)	HE machining building and associated structures	Former Sump
16-029(r)	20s-Line and associated structures	Outfall from Former Building 16-25
16-029(s)	90s-Line: 16-89, 16-90, 16-91, 16-92, 16-93	Sumps
16-029(t)	90s-Line: 16-89, 16-90, 16-91, 16-92, 16-93	Sumps
16-029(u)	90s-Line: 16-89, 16-90, 16-91, 16-92, 16-93	Sumps
16-029(v)	Building footprints, drainlines, and sumps	Sump
16-029(w)	V-Site: Buildings 16-100, 16-515 and associated structures	Soil Contamination from Former Sump
16-029(x)	V-Site: Buildings 16-100, 16-515 and associated structures	Sump
16-029(y)	Experimental casting building, associated drainlines and sumps	Sump
16-029(z)	Former structures, 40s-Line	Sumps
16-030(a)	Outfall from 16-344, chemical storage building	Outfall from Former Building 16-344
16-030(c)	16-222 outfall	Outfall from Former Building 16-222
16-030(d)	Outfall	Outfall from Building 16-280
16-030(g)	Outfall	Outfall from Building 16-380
16-030(h)	Outfall	Outfalls from Building 16-430
16-031(a)	Industrial or sanitary wastewater treatment, 16-372	Outfall from Cooling Tower 16-372
16-031(b)	Industrial or sanitary wastewater treatment, 16-262	Outfall from Former Cooling Tower 16-262
16-031(c)	V-Site: Buildings 16-100, 16-515 and associated structures	Outfall Associated with Former Building 16-515
16-031(d)	20s-Line and associated structures	Outfall from Former Cooling Tower 16-28
16-031(e)	Outfall, industrial or sanitary wastewater treatment	Outfall from Building 16-560
16-031(f)	Outfall, industrial or sanitary wastewater treatment	Outfall from Former Building 16-21
16-031(h)	Industrial or sanitary wastewater treatment at P-Site	Outfall from Former Building 16-478
16-032(a)	Former structures, 40s-Line	Sumps
16-032(c)		Sumps, Drainlines, and Outfall from Former Building 16-26
16-033(a)	Underground tank	Soil Contamination from Former Underground Tank
16-033(b)	Underground tank	Soil Contamination from Former Underground Tank
16-033(c)	Underground tank	Soil Contamination from Former Underground Tank
16-033(d)	Tank and/or associated equipment	Soil Contamination from Former Underground Tank
16-033(e)	Underground tank	Underground Tanks
16-033(f)	Underground tank	Soil Contamination from Former Underground Tank
16-033(g)	Underground tank	Soil Contamination from Former Underground Tank
16-033(h)	Underground tank	Soil Contamination from Former

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
		Underground Tank
16-033(i)	Underground tank	Soil Contamination from Former Underground Tank
16-033(j)	Underground tank	Soil Contamination from Former Underground Tank
16-033(k)	Underground storage tank <100 gallons	Underground Storage Tank
16-034(a)	20s-Line and associated structures	Soil Contamination from Former Laboratory 16-24
16-034(b)	Former structures, T-Site	Soil Contamination from Former Building 16-490
16-034(c)	Former structures, T-Site	Soil Contamination from Former Storage Hut 16-491
16-034(d)	Former structures, T-Site	Soil Contamination from Former Machine Shop 16-492
16-034(e)	Former structures, T-Site	Soil Contamination from Former Storage Building 16-496
16-034(f)	Former structures, T-Site	Soil Contamination from Former Laboratory 16-498
16-034(h)	Soil contamination area, 16-137	Soil Contamination from Former Plumbing and Electrical Shop 16-137
16-034(i)	Soil contamination area	Soil Contamination from Former Storage Structure 16-141
16-034(j)	Soil contamination area	Soil Contamination from Former Structure
16-034(k)	Soil contamination area	Soil Contamination from Former Storage Structure 16-140
16-034(l)	Former structures, 40s-Line	Soil Contamination from Former Equipment and Control Building 16-47
16-034(m)	Soil contamination area	Soil Contamination from Former Laboratory 16-86
16-034(n)	Soil contamination area	Soil Contamination from Former Laboratory 16-83
16-034(o)	Building footprints, drainlines, and sumps	Soil Contamination from Former Laboratory 16-49
16-034(p)	Former structures, 40s-Line	Soil Contamination from Former Building 16-41
16-035	Firing site, landfill, and soil contamination	Soil Contamination from Control Bunker 13-2 (Renumbered to 16-476)
16-036	Firing site, landfill, and soil contamination	Soil Contamination from Battleship Bunkers 16-477 and -478
16-037	Aboveground Tank	Aboveground tank - Existence Not Verified
C-16-001	Building	Building (Former Platform)
C-16-002	Building 16-262	Soil Contamination from Former Cooling Tower 16-262
C-16-005	Building	Soil Contamination from Former HE Processing Building 16-53
C-16-006	Building	Soil Contamination from Former Solvent Storage Building 16-148
C-16-008	Building	Soil Contamination Associated with Former Structure 16-136
C-16-009	Building	Soil Contamination Associated with Former Building 16-134
C-16-010	Building	Soil Contamination Associated with Former

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
		Building 16-135
C-16-011	Building TA-16-132	Soil Contamination from Former Paint Shop 16-132
C-16-012	Building	Soil Contamination Associated with Former Building 16-138
C-16-013	Storage area	Soil Contamination Associated with Former Storage Area
C-16-014	Building	Soil Contamination Associated with Former Structure 16-144
C-16-015	Building	Soil Contamination Associated with Former Building 16-143
C-16-016	Building	Soil Contamination Associated with Former Building 16-142
C-16-017	Building	Soil Contamination Associated with Former Building 16-502
C-16-018	Aboveground tank	Soil Contamination Associated with Former Aboveground Tank
C-16-019	Building	Soil Contamination Associated with Former Building 16-19
C-16-020	Building	Soil Contamination Associated with Former Building 16-22
C-16-025	Storage building	Soil Contamination from Former Building 16-8
C-16-026	Storage building	Soil Contamination from Former Building 16-6
C-16-028	Former structure	Soil Contamination from Instrument Shop 16-5
C-16-030	Former structure	Soil Contamination from Former Tank Housing 16-181
C-16-031	Building	Soil Contamination from Former Diesel Unit Building 16-182
C-16-034	Aboveground tank	Soil Contamination Associated with Former Aboveground Tank
C-16-035	Aboveground tank	Soil Contamination Associated with Former Aboveground Tank
C-16-036	Septic system	Soil Contamination Associated with Former Septic System
C-16-041	Building	Soil Contamination Associated with Former Building 16-198
C-16-044	Manhole	Soil Contamination Associated with Former Manhole
C-16-046	Manhole	Soil Contamination Associated with Former Manhole
C-16-047	Transport area	Soil Contamination Associated with Former Transport Area
C-16-049	Building	Soil Contamination Associated with Former Building 16-475
C-16-050	Building	Soil Contamination Associated with Former Building 16-482
C-16-051	Transport area	Soil Contamination Associated with Former Transport Area
C-16-058	Transport area	Soil Contamination Associated with Former Transport Area

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
C-16-060	Building	Soil Contamination from Former Storage Structure 16-479
C-16-061	Building	Soil Contamination Associated with Building (Former Platform)
C-16-062	Generation area	Soil Contamination Associated with Former Electrical Manhole
C-16-063	Generation area	Soil Contamination Associated with Former Electrical Manhole
C-16-065	Drum storage area	Container Storage Area
C-16-068	Building 16-522	Soil Contamination Associated with Former Building 16-522
C-16-069	Building	Soil Contamination Associated with Former Trailer 16-87
C-16-071	One-time spill	Spill/Non-Intentional Release Area
C-16-072	Tank	Tank - Existence Not Verified
C-16-073	Underground tank	Underground Storage Tank
C-16-074	Storage	Storage Area
C-16-075	Spill location near Building 16-340	Spill Location near former Building 16-340
18-001(a)	Industrial or sanitary wastewater treatment	Lagoons
18-001(b)	Industrial or sanitary wastewater treatment	Drainlines
18-001(c)	Tanks, sumps, outfalls	Sump
18-002(a)	Firing site (inactive)	Firing site
18-002(b)	Firing site (inactive)	Firing site
18-002(c)	Drop Tower	Former Drop Tower
18-003(a)	Tanks, sumps,and outfalls	Settling Pit
18-003(b)	Tanks, sumps,and outfalls	Septic System
18-004(a)	Tanks, sumps, outfalls	Waste Line
18-004(b)	Tanks, sumps, outfalls	Soil Contamination from Former Tanks and Pit
18-005(a)	Storage area	Contaminated Soil from Former Magazine 18-15
18-008	Underground tank, TA 18-26	Former Underground Tank
18-010(f)	Outfall	Outfall from Building 18-32
18-011	Soil containment	Soil Contamination From Former Building 18-22
18-012(a)	Outfall	Outfall from Building 18-116
18-012(b)	Tanks, sumps, outfalls	Outfall from Buildings 18-30 and -31
18-012(c)	Sump and drainlines	Sump and Drainlines
19-001	Former East Gate Laboratory and septic system	Septic System
19-002	Former East Gate Laboratory and septic system	Surface Disposal Site
20-001(a)	Landfill	Landfill
20-001(b)	Firing site	Landfill
20-002(a)	Landfill	Firing Site
20-002(b)	Landfill	Firing Site
20-004	Septic system	Former Septic System
21-001	Material disposal area (MDA T)	Container Storage Area

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
21-002(a)	Container storage areas located throughout TA-21	Container Storage Areas
21-003	PCB container storage and surface disposal area	Container Storage Area
21-004(b)	Aboveground tanks and outfall area	Aboveground Tank
21-004(c)	Aboveground tanks and outfall area	Aboveground Tank
21-006(a)	Disposal pit bldg 21-2	Underground Seepage Pit
21-006(b)	Seepage pit	Underground Seepage Pit
21-006(c)	Seepage pit	Underground Seepage Pit
21-006(d)	Stone pit	Underground Seepage Pit
21-006(e)	Underground seepage pits	Underground Seepage Pit
21-006(f)	Disposal Pit	Underground Seepage Pit
21-007	Material disposal area (MDA T)	Soil Contamination from Former Incinerators
21-009	Waste treatment laboratory	Soil Contamination Associated with Former Waste Treatment Laboratory
21-010(a)	Material disposal area (MDA T)	Soil Contamination from Former Waste Treatment Facility 21-35
21-010(b)	Material disposal area (MDA T)	Soil Contamination from Former Manhole
21-010(c)	Material disposal area (MDA T)	Soil Contamination from Former Underground Tank
21-010(d)	Material disposal area (MDA T)	Soil Contamination from Former Underground Tank
21-010(e)	Material disposal area (MDA T)	Soil Contamination from Former Septic Tank
21-010(f)	Material disposal area (MDA T)	Soil Contamination from Former Grit Chamber
21-010(g)	Material disposal area (MDA T)	Soil Contamination from Former Aboveground Tank
21-010(h)	Material disposal area (MDA T)	Soil Contamination from Former Manhole
21-011(a)	Material disposal area (MDA T)	Waste Treatment Facility 21-257
21-011(c)	Material disposal area (MDA T)	Tank and Sump
21-011(d)	Material disposal area (MDA T)	Holding Tank
21-011(e)	Material disposal area (MDA T)	Holding Tank
21-011(f)	Material disposal area (MDA T)	Holding Tank
21-011(g)	Material disposal area (MDA T)	Holding Tank
21-011(h)	Aboveground Tank (MDA T)	Soil Contamination from Former Storage Tank
21-011(i)	Material disposal area (MDA T)	Storage Tank
21-011(j)	Material disposal area (MDA T)	Storage Tank
21-011(k)	Outfall	Outfall from Building 21-257
21-013(a)	Former sewage treatment plant	Surface Disposal Site
21-013(b)	Material disposal area (MDA V)	Surface Disposal Site
21-013(d)	Surface disposal areas	Surface Disposal Site
21-013(e)	Surface disposal areas	Surface Disposal Site
21-013(f)	Surface disposal site and PCB container storage	Surface Disposal Site
21-013(g)	Surface disposal site (MDA V)	Surface Disposal Site
21-014	Material disposal area (MDA A)	MDA A
21-015	Material disposal area (MDA B)	MDA B

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
21-016(a)	Material disposal area (MDA T)	Absorption Beds (MDA T)
21-016(b)	Material disposal area (MDA T)	Soil Contamination from a Former Storage Pit (MDA T)
21-016(c)	Material disposal area (MDA T)	Shafts (MDA T)
21-017(a)	Material disposal area (MDA U)	Absorption Bed (MDA U)
21-017(b)	Material disposal area (MDA U)	Absorption Bed (MDA U)
21-017(c)	Material disposal area (MDA U)	Soil Contamination from Former Distribution Box (MDA U)
21-018(a)	Material disposal area (MDA V)	Absorptions Beds (MDA V)
21-018(b)	Material disposal area (MDA V)	Soil Contamination from Former Laundry Facility (MDA V)
21-021	Surface soil contamination area	Soil Contamination from Stack Emissions
21-022(a)	Tank, sump, and outfall	Sump and Waste Lines
21-022(b)	Industrial waste lines and sumps	Soil Contamination from Former Sump and Waste Line
21-022(c)	Industrial waste lines and sumps	Soil Contamination from Former Sump and Waste Line
21-022(d)	Industrial waste lines and sumps	Soil Contamination from Former Sump and Waste Line
21-022(e)	Industrial waste lines and sumps	Soil Contamination from Former Sump and Waste Line
21-022(f)	Sump and drainlines	Sump and Waste Line
21-022(g)	Industrial waste lines and sumps	Soil Contamination from Former Sump and Waste Line
21-022(h)	Drainline and outfall	Sump and Waste Line
21-022(i)	Drainline and outfall	Sump and Waste Line
21-022(j)	Drainline and outfall	Former Sump and Waste Line
21-023(a)	Septic tanks and distriion lines	Soil Contamination from Former Septic System
21-023(b)	Septic tanks and distriion lines	Soil Contamination from Former Septic System
21-023(c)	Material disposal area (MDA V)	Septic System
21-023(d)	Septic tanks and distriion lines	Soil Contamination from Former Septic System
21-024(f)	Septic system	Former Septic System
21-024(i)	Septic system	Former Septic System
21-024(l)	Tank, sump, and outfall	Outfall from Building 21-21
21-026(a)	Former sewage treatment plant	Sewage Treatment Plant
21-026(b)	Former sewage treatment plant	Sand Filter/Sludge Drying Beds
21-026(c)	Wastewater treatment facility	Dosing Siphon Chamber
21-026(d)	Outfall	Outfall from Building 21-227
21-027(a)	Industrial or sanitary wastewater treatment	Drainage System
21-027(c)	Industrial or sanitary wastewater treatment	Outfall from Former Building 21-6
21-027(d)	Aboveground storage tank and outfall	Soil Contamination from Former Drainline
21-028(a)	Container storage (MDA T)	Container Storage Area
21-028(c)	Container storage building 21-3	Container Storage Areas
21-028(d)	Container storage	Container Storage Area
21-029	Soil contamination area	Former DP Tank Farm

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
C-21-001	One-time spill	Spill/Non-Intentional Release Area
C-21-005	One-time spill	Spill/Non-Intentional Release Area
C-21-006	Non-intentional release area Building 21-2	Spill/Non-Intentional Release Area
C-21-007	Non-intentional release area	Spill/Non-Intentional Release Area
C-21-009	One-time spill (MDA T)	Spill/ Non-Intentional Release
C-21-012	One-time spill (MDA T)	Spill/ Non-Intentional Release
C-21-027	Machinery	Former Structure 21-143
C-21-033	One-time spill	Spill/Non-Intentional Release Area
C-21-034	Tank	Soil Contamination Associated with Former Tank
C-21-035	Aboveground tank	Soil Contamination Associated with Former Aboveground Tank
C-21-036	Aboveground tank	Soil Contamination Associated with Former Aboveground Tank
C-21-037	Aboveground tank	Soil Contamination Associated with Former Aboveground Tank
22-012	Septic system	Decontamination Pad
22-014(a)	Industrial or sanitary wastewater treatment	Sump System
22-014(b)	Sump	Sump System
22-015(c)	Outfall	Outfall from Building 22-52
22-015(d)	Septic system	Drainline and Outfall Associated with Building 22-1
22-015(e)	Septic system	Sump
26-002(a)	Former acid sump system	Soil Contamination from Former Acid Sump System
26-002(b)	Former drainage system	Drainline Associated with Vault 26-01
27-002	Firing sites (abandoned)	Firing Sites
31-001	Outfall from sanitary septic system	Soil Contamination from Former Septic Tank
32-001	Incinerator (former location)	Soil Contamination from Former Incinerator
32-002(a)	Septic tank (former location); drainlines	Soil Contamination from Former Septic Tank
32-002(b)	Septic system	Soil Contamination from Former Septic Tank
32-003	Transformer site (former location)-New SWMU	Former Transformer Station
32-004	Drainline and outfall_New SWMU	Drainline and Outfall from Former Building 32-3
33-001(a)	Material disposal area (MDA E)	Disposal Pit (MDA E)
33-001(b)	Material disposal area (MDA E)	Disposal Pit (MDA E)
33-001(c)	Material disposal area (MDA E)	Disposal Pit (MDA E)
33-001(d)	Material disposal area (MDA E)	Disposal Pit (MDA E)
33-001(e)	Material disposal area (MDA E)	Soil Contamination from Underground Chamber and Shaft (MDA E)
33-002(a)	Material disposal area (MDA K)	Septic System (MDA K)
33-002(b)	Material disposal area (MDA K)	Sump (MDA K)
33-002(c)	Material disposal area (MDA K)	Sump (MDA K)
33-002(d)	Material disposal area (MDA K)	Drainline and Outfall from Former Building 33-86 (MDA K)
33-002(e)	Material disposal area (MDA K)	Drainline and Outfall from Former Building 33-86 (MDA K)

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
33-003(a)	Material Disposal Area (MDA D)	Soil Contamination from Former Underground Chamber and Shaft (MDA D)
33-003(b)	Material Disposal Area (MDA D)	Soil Contamination from Former Underground Chamber and Shaft (MDA D)
33-004(a)	Firing site - Main Site	Septic System
33-004(g)	Firing site - Area 6	Drainline and Outfall Associated with Building 33-16
33-004(h)	Firing site - Main Site	Drainline and Outfall Associated with Building 33-20
33-004(i)	Firing site - Main Site	Drainlines and Outfalls Associated with Building 33-39
33-004(j)	Firing site - South Site	Outfall from Building 33-26
33-004(k)	Outfall	Drainlines and Outfall Associated with Structure 33-87
33-004(m)	Septic system	Septic Tank and Leach Field
33-005(a)	Former structures - Main Site	Soil Contamination from Former Septic System
33-005(b)	Former structures - Main Site	Soil Contamination from Former Drainline
33-005(c)	Former structures - Main Site	Soil Contamination from Former Waste Line and Leach Field
33-006(a)	Firing site - South Site	Firing Site
33-006(b)	Firing site - East Site	Firing Site
33-007(a)	Firing site - East Site	Firing Site
33-007(b)	Firing site - South Site	Firing Sites
33-007(c)	Firing site - Area 6	Firing Sites
33-008(a)	Firing site - South Site	Landfill
33-008(b)	Firing site - East Site	Landfill
33-008(c)	Landfill-New SWMU	Landfill
33-009	Surface disposal - PCB only site	Surface Disposal Site
33-010(a)	Firing site - East Site	Surface Disposal Site
33-010(b)	Surface disposal	Surface Disposal Site
33-010(c)	Firing site - South Site	Surface Disposal Site
33-010(d)	Surface disposal	Surface Disposal Site
33-010(f)	Material disposal area (MDA K)	Surface Disposal Site
33-010(g)	Surface disposal	Surface Disposal Site
33-010(h)	Firing site - South Site	Surface Disposal Site
33-011(a)	Former structures - Main Site	Soil Contamination from Former Storage Area
33-011(c)	Firing site - South Site	Storage Area
33-011(d)	Firing site - Main Site	Storage Area
33-011(e)	Drum storage	Storage Area
33-012(a)	Drum storage - PCB only site	Drum Storage Area
33-013	Storage area	Drum Storage Area
33-014	Firing site - South Site	Burn Site
33-015	Firing site - Main Site	Incinerator
33-017	Firing site - Main Site	Operational Release
C-33-001	Transformer	Former Transformer
C-33-002	Transformer	Former Transformer

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
C-33-003	Soil contamination area	Soil Contamination
35-002	Material disposal area (MDA X)	MDA X
35-003(a)	Wastewater treatment plant	Former Underground Tank
35-003(b)	Wastewater treatment plant	Former Underground Tank
35-003(c)	Wastewater treatment plant	Former Underground Tank
35-003(d)	Wastewater treatment plant - Pratt Canyon	Soil contamination from Former Building 35-10
35-003(e)	Wastewater treatment plant	Soil Contamination from Former Storage Tank
35-003(f)	Wastewater treatment plant	Soil Contamination from Former Flocculator Tank
35-003(g)	Wastewater treatment plant	Soil Contamination from Former Regenerant Tank
35-003(h)	Wastewater treatment plant	Soil Contamination from Former Retention Tank
35-003(j)	Former structures	Soil Contamination from Former Storage Tank
35-003(k)	Former structures	Soil Contamination from Former Storage Tank
35-003(l)	Wastewater treatment plant - Pratt Canyon	Soil Contamination from Former Pump Pit
35-003(m)	Wastewater treatment plant	Soil Contamination from Former Sludge Tank
35-003(n)	Wastewater treatment plant	Former Phase Separator Pit
35-003(o)	Wastewater treatment plant	Soil Contamination from Former Manhole
35-003(p)	Wastewater treatment plant	Former Air-Filter Building
35-003(q)	Wastewater treatment plant - Pratt Canyon	Soil Contamination from Former Pipe Trench
35-003(r)	Outfall	Outfall Associated with Former Building 35-10
35-003 (misc)	Ind. Waste lines	Soil Contamination from Former Industrial Waste Lines
35-004(a)	Storage areas	Container Storage Area
35-004(b)	Storage areas	Container Storage Area
35-004(g)	Septic system	Container Storage Area
35-004(h)	Container storage area	Container Storage Area
35-004(m)	Container storage area	Container Storage Area
35-008	Surface disposal	Surface Disposal Site
35-009(e)	Septic system	Drainline
35-010(a)	Former surface impoundment	Wastewater Treatment Lagoons
35-010(b)	Former surface impoundment	Wastewater Treatment Lagoons
35-010(c)	Former surface impoundment	Wastewater Treatment Lagoons
35-010(d)	Former surface impoundment	Filter Beds
35-010(e)	Discharge from sand filter	Outfall Associated with Filter Beds
35-013(a)	Sump	Sumps
35-013(b)	Sump	Sumps
35-013(c)	Sump	Sumps
35-014(a)	Operational release	Operational Release from Former Building 35-7
35-014(b)	Former structures	Soil Contamination from Leaking Drum
35-014(d)	Operational release	Soil Contamination from Valve System for

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
		Former Storage Tanks
35-014(e)	Former Oil Spill	Spill/Non-Intentional Release Area
35-014(e2)	Oil spill	Soil Contamination Associated with Overflows from Waste Oil Impoundment
35-014(f)	Soil contamination	Soil Contamination from Oil-Handling System
35-014(g)	Soil contamination area	Spill/Non-Intentional Release Area
35-014(g2)	Soil contamination	Soil Contamination from Former Leaking Containers
35-014(g3)	Soil contamination	Spill/Non-Intentional Release
35-015(a)	Soil contamination	Soil Contamination from Former Tank Farm and Waste-Oil Treatment Facility
35-015(b)	Former structures	Soil Contamination from Former Waste Oil Treatment Facility
35-016(a)	Drains and outfalls	Drain and Outfall from Building 35-34
35-016(b)	Outfall	Drains and Outfall from Building 35-87
35-016(c)	Drainlines and outfall	Drains and Outfalls from Building 35-67
35-016(d)	Drainlines and outfall	Drain and Outfall from Building 35-46
35-016(e)	Outfall	Drains and Outfall from Building 35-85
35-016(f)	Storm drain	Storm Drain and Outfall
35-016(g)	Outfall	Drain and Outfall from Building 35-213
35-016(h)	Storm drain	Storm Drains and Outfall Associated with Building 35-213
35-016(i)	Drainlines and outfalls	Storm Drains and Outfall
35-016(j)	Storm drain	Storm Drain and Outfall Associated with Building 35-125
35-016(k)	Drainlines and outfalls	Drain and Outfall from Building 35-29
35-016(l)	Storm drain	Storm Drains
35-016(m)	Drains and outfalls	Drainlines and Outfall Associated with Cooling Tower 35-33
35-016(n)	Storm drain	Storm Drain and Outfall Associated with Building 35-86
35-016(o)	Drains and outfalls	Storm Drains and Outfalls
35-016(p)	Outfall	Outfall from Building 35-27
35-016(q)	Drains and outfalls	Stormwater Collection Basins
35-018(a)	Transformer	Former Transformer
C-35-007	Soil contamination	Soil Contamination Associated with WWTP Sand Filters
36-001	Material disposal area (MDA AA)	MDA AA
36-002	Sump	Former Sump
36-004(a)	Former firing site	Firing Site
36-004(b)	Firing site (active)	Firing Site
36-004(c)	Firing site - open detonation (active)	Firing Site
36-004(d)	Firing site (Lower Slobbovia, skunk works, burn pit) (active)	Firing Site
36-004(e)	I-J Firing site (active)	Firing Site
36-005	Surface disposal site	Surface Storage Area
36-006		Surface Disposal Site

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
36-008	New SWMU-Surface disposal Area/Waste Explosive Treatment	NEW SWMU - Surface Disposal Area Located Near Building 36-1
C-36-003	Storm drainages	Outfall from Building 36-1
39-001(b)	Material disposal area (MDA Y)	Disposal Pits (MDA Y)
39-004(c)	Firing site TA-39-6 (open detonation) - RCRA Unit (active)	Firing Site
39-004(d)	Firing site TA-39-57 (open detonation) - RCRA Unit (active)	Firing Site
39-004(e)	Firing site (active)	Firing Site
39-005	Seepage pit	Potential Soil Contamination Associated with Former Seepage Pit
39-008	Firing range (inactive)	Disposal Trenches
39-010	Excavated soil dump-New SWMU	Excavated-Soil Pile
40-003(b)	Burning area/open detonation	Burning Area
40-006(a)	Firing site (active)	Firing Site
40-006(b)	Firing site (active)	Firing Site
40-006(c)	Firing site (active)	Firing Site
41-001	Septic system	Septic Tank
41-002(a)	TA-41 Sewage Treatment Plant	Imhoff Tank
41-002(b)	TA-41 Sewage Treatment Plant	Chlorine Contact Tank
41-002(c)	TA-41 Sewage Treatment Plant	Sludge Drying Bed
42-001(a)	TA-42 incinerator complex	Soil Contamination from Former Incinerator Building 42-1
42-001(b)	TA-42 incinerator complex	Soil Contamination from Former Ash Storage Tank
42-001(c)	TA-42 incinerator complex	Soil Contamination from Former Ash Storage Tank
42-002(a)	Former structures	Soil Contamination from Former Vacublaster and Storage Area
42-002(b)	TA-42 incinerator complex	Soil Contamination from Former Decontamination Area
42-003	TA-42 incinerator complex	Soil Contamination from Former Septic System
43-001(a)	Waste lines (pre-1981)	Waste Lines
43-001(a2)	Waste lines (post-1981)	Waste Lines
43-001(b2)	Outfall	Outfall from Building 43-1
43-002	Incinerator	Former Incinerator
C-43-001	Outfall	Storm Drain Associated with Building 43-1 Loading Dock
45-001	Wastewater treatment plant - TA-45	Soil Contamination from Former RLW Treatment Plant
45-002	Wastewater treatment plant - TA-45	Soil Contamination from Former Decontamination Facility
45-003	Wastewater treatment plant - TA-45	Soil Contamination from Former Waste Lines
45-004	Wastewater treatment plant - TA-45	Sanitary Sewer Outfall
C-45-001	Parking lot of former treatment plant	Soil Contamination from Spill in Parking Lot South of Former RLW Treatment Plant
46-002	Surface impoundment	Surface Impoundment
46-003(h)	Operational release	Outfall from Building 46-77

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
46-004(a2)	Outfall	Outfall Associated with Building 46-31
46-004(b)	Operational release	Soil Contamination Associated with Former Tank
46-004(b2)	Operational release	Outfall Associated with Building 46-1
46-004(c2)	Outfall	Outfall from Building 46-1
46-004(d)	Dry wells	Dry Well
46-004(d2)	Stack emissions/outfalls	Soil Contamination from Stack Emissions
46-004(e)	Dry wells	Dry Well
46-004(e2)	Outfall	Outfall from Building 46-42
46-004(f)	Outfall	Drain Associated with Building 46-24
46-004(f2)	Outfall	Outfall from Building 46-31
46-004(g)	Stack emissions/outfalls	Drains and Exhaust System
46-004(h)	Stack emissions/outfalls	Drains and Exhaust System
46-004(m)	Outfall	Outfall from Building 46-30
46-004(p)	Sump	Dry Well
46-004(r)	Outfall	Outfall from Building 46-24
46-004(s)	Outfall	Outfall Associated with Building 46-1
46-004(t)	Outfall	Outfall from Building 46-88
46-004(u)	Outfall	Outfall from Building 46-87
46-004(v)	Outfall	Outfall from Building 46-87
46-004(w)	Outfall	Outfall from Building 46-59
46-004(x)	Outfall	Outfall from Building 46-31
46-004(y)	Outfall	Outfall from Building 46-31
46-004(z)	Outfall	Outfall from Building 46-31
46-006(b)	Operational release	Former Storage Shed
46-006(g)	Operational release	Storage Area
46-009(a)	Surface disposal	Landfill
46-009(b)	Surface disposal	Surface Disposal Site
46-010(d)	Operational release SAA	Storage Area
C-46-001	One-time spill	Spill/Non-Intentional Release Area
C-46-002	Stack emmisions	Soil Contamination from Stack Emissions-Non-Intentional Release
C-46-003	Stack emmisions	Soil Contamination from Stack Emissions-Non-Intentional Release
48-003	Septic system	Soil Contamination Associated With Former Septic System
48-004(a)	Sumps and tanks	Sumps
48-004(b)	Sumps and tanks	Tanks
48-004(c)	Sumps and tanks	Tanks
48-007(a)	Drainlines and outfalls	Outfall Associated with Building 48-1
48-007(b)	Drains and outfalls	Outfall from Building 48-1
48-007(c)	Drains and outfalls	Outfall from Building 48-1
48-007(d)	Drainlines and outfalls	Outfall Associated with Building 48-1
48-007(f)	Drains and outfalls	Outfall from Building 48-46
48-010	Drainlines and outfalls	Surface Impoundment
49-001(a)	Material disposal area (MDA AB)	Shafts at Area 1 (MDA AB)

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
49-001(b)	Material disposal area (MDA AB)	Shafts at Area 2 (MDA AB)
49-001(c)	Material disposal area (MDA AB)	Shafts at Area 2A (MDA AB)
49-001(d)	Material disposal area (MDA AB)	Shafts at Area 2B (MDA AB)
49-001(e)	Material disposal area (MDA AB)	Shafts at Area 3 (MDA AB)
49-001(f)	Material disposal area (MDA AB)	Shafts at Area 4 (MDA AB)
49-001(g)	Material disposal area (MDA AB)	Soil Contamination (MDA AB)
49-008(d)	Firing sites (Bottle House area) soil contamination and underground chamber (inactive)	Firing Sites (Bottle House Area) Soil Contamination and Underground Chamber
50-001(a)	Waste treatment facility TA-50-1 - RCRA Unit (active)	Waste Treatment Facility
50-001(b)	Waste lines and manholes	Waste Lines
50-002(b)	Vaulted underground tanks for TA-55 wastes	Vaulted Underground Tank
50-002(c)	Vaulted underground tanks for TA-55 wastes	Vaulted Underground Tank
50-002(d)	Underground tank	Aboveground Storage Tank
50-004(a)	Historical waste lines and underground vault, Radioactive Liquid Waste Treatment Facility	Soil Contamination from Former Waste Lines
50-004(b)	Historical waste lines and underground vault, Radioactive Liquid Waste Treatment Facility	Soil Contamination from Former Vault and Tanks
50-004(c)	Historical waste lines and underground vault, Radioactive Liquid Waste Treatment Facility	Soil Contamination from Former Waste Lines and Manholes
50-006(d)	Effluent discharge	Outfall Associated with Building 50-1
50-007	Incinerator	Former Incinerator Complex
50-009	Material disposal area (MDA C)	MDA C
50-011(a)	Septic system	Soil Contamination Associated With Former Septic System
C-50-001	Transformer	Former Transformer
51-001	Septic system	Former Septic System
52-001(d)	UHTREX equipment	Former Facility Equipment
52-003(a)	Waste treatment facility	Former Wastewater Treatment Facility
53-001(a)	Storage area - PCB only site	Storage Area
53-005	Disposal pit	Soil Contamination Associated with Former Disposal Pit
53-008	Storage area, Boneyard	Storage Area
53-009	Aboveground tanks (3)	Aboveground Tanks
53-012(e)	Outfall	Outfall from Building 53-2
53-013	Lead Shot Site I_New SWMU	Soil Contamination -Lead Storage Site I
53-014	Lead Shot Site II_New SWMU	Soil Contamination, Lead Storage Site II
53-015	Radioactive Liquid Waste Treatment System_New SWMU	Radioactive Liquid Waste Treatment System
54-004	Material disposal area (MDA H) (except shaft 9)	MDA H
54-005	Material disposal area (MDA J) (Pits 1-5, Shafts 1-4)	MDA J
54-006	Material disposal area (MDA L) (all subsurface units such as Pit A, SI B,C,D, Shafts 1-28, 29-34)	MDA L
54-007(a)	Septic system	Former Septic System
54-007(d)	Septic system	Former Septic System

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
54-012(a)	Former Reduction site (drum compactor)	Former Drum Compactor
54-012(b)	Reduction site	Drum Crusher
54-013(b)	Material disposal area (MDA G) subsurface waste management units	Vehicle Monitoring/Decontamination Area (MDA G)
54-014(a)	Material disposal area (MDA L) storage shafts (Pb stringer shafts)	Storage Shafts at MDA L
54-014(b)	Material disposal area (MDA G) subsurface waste management units	Pit 9 (MDA G)
54-014(c)	Material disposal area (MDA G) subsurface waste management units	Shafts 200-233 (MDA G)
54-014(d)	Material disposal area (MDA G) subsurface waste management units	Storage Trenches A, B, C, and D (MDA G)
54-015(b)	Pit 39- LLW disposal area (former TRU surface storage)	Storage Area
54-015(k)	Material disposal area (MDA G) subsurface waste management units	Layer of TRU Waste
54-017	Material disposal area (MDA G) subsurface waste management units	Disposal Pits (MDA G)
54-018	Material disposal area (MDA G) subsurface waste management units	Disposal Pits (MDA G)
54-019	Material disposal area (MDA G) subsurface waste management units	Disposal Shafts (MDA G)
54-020	Material disposal area (MDA G) subsurface waste management units	Disposal Shafts (MDA G)
57-001(b)	Settling ponds	Former Settling Ponds
57-001(c)	Settling pond	Former Settling Pond
57-004(a)	Surface impoundment	Former Settling Ponds
57-004(b)	Surface impoundment	Settling Pond
57-006	Drum and contents, Fenton Hill (removed)	Former Drum and Contents
59-004	Outfall	Outfall from Building 59-1
C-59-001	PCB containing capacitors & transformer	Transformer
60-005(a)	Surface impoundment -formerly SWMU 03-029(a)	Surface Impoundment
60-006(a)	Septic tank and seepage pit	Septic System
60-007(a)	Systematic or intent. prod. release	Operational Release
60-007(b)	Systematic or intent. prod. release	Operational Release
61-002	Transformer storage area - PCB only site	Transformer Storage Area
61-005	Landfill (Los Alamos municipal)	Landfill
61-007	Transformer site - systematic leak - PCB only site	Soil Contamination Associated with Transformer Staging Area
69-001	Incinerator and associated equipment	Twomile Incinerator Facility
73-001(a)	Former landfill	Landfill
73-001(b)	Former landfill	Soil Contamination from Former Waste Oil Pit
73-001(c)	Former landfill	Bunkers
73-001(d)	Former landfill	Landfill
73-002	Miscellaneous airport structures	Incinerator Surface Disposal
73-003	Steam cleaning plant	Soil Contamination from Former Steam Cleaning Plant
73-004(a)	Miscellaneous airport structures	Former Septic Tank

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
73-004(b)	Miscellaneous airport structures	Former Septic Tank
73-004(d)	Former landfill	Soil Contamination from Former Septic Tank
73-006	Miscellaneous airport structures	Airport Building Outfalls
Table P-2		
03-001(i)	Satellite Accumulation Area	Former Equipment Storage Area
Table P-3		
00-003	Western Steam Plant	Container storage, Western Steam Plant
00-004	Container Storage, 6th street warehouses, C27	Container storage, 6th Street Warehouses
00-012	Western Steam Plant	Underground tank, Western Steam Plant
00-016	Former small-arms Firing Range	Firing range
00-024	Cistern	Cistern (never located)
00-032	Soil contamination beneath former motorpool (UST)	Soil contamination beneath former motorpool (UST for used motor oil)
00-033(b)	Former structures, 6th Street warehouse (as 0-033 on old permit)	Outlet piping, 6th Street warehouse
00-040	Underground storage tank (new AOC)	Underground tank
01-001(h)	Septic Tank	Septic Tank 142
01-001(i)	Septic Tank	Septic Tank 143
01-001(j)	Septic Tank	Septic Tank 149
01-001(k)	Septic Tank	Septic Tank 268
01-001(l)	Septic Tank	Septic Tank 269
01-001(n)	Septic Tank	Septic Tank 276
01-001(p)	Septic sytem, C23	Septic system
01-004(a)	Incinerator	Soil Contamination from Former Incinerator
01-004(b)	Incinerator	Soil Contamination from Former Incinerator
01-005	Incinerator	Soil Contamination from Former Incinerator
01-006(p)	Drainlines and outfall	Storm Drain and Outfall
01-007(f)	Soil contamination area	Soil Contamination Associated with TA-01 Buildings and Structures
01-007(g)	Soil contamination area	Soil Contamination Associated with TA-01 Buildings and Structures
01-007(h)	Soil contamination area	Soil Contamination Associated with TA-01 Buildings and Structures
01-007(i)	Soil contamination area	Soil Contamination Associated with TA-01 Buildings and Structures
01-007(m)	Soil contamination area	Soil Contamination Associated with TA-01 Buildings and Structures
01-007(n)	Soil contamination area	Soil Contamination Associated with TA-01 Buildings and Structures
01-007(o)	Soil contamination area	Soil Contamination Associated with TA-01 Buildings and Structures
01-007(p)	Soil contamination area	Soil Contamination Associated with TA-01 Buildings and Structures
02-001	Open burning ground	Open burning ground (doesn't exist)
02-002	Storage area, PCB site	Storage area
02-008(b)	Inactive Outfall	Outfall from photo processing facility, 2-4
02-013	Storage area	Storage area - SAA
03-001(o)	Satellite Accumulation Area	Waste container

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
03-002(a)	Less than 90 day Storage	Less-than-ninety-day accumulation area
03-003(m)	Storage area - capacitor banks, PCB site	Former Storage area
03-009(b)	Surface Disposal	Surface disposal area
03-009(d)	Surface Disposal	Surface Disposal Site
03-016(e)	Septic system	Septic system - duplicate of 3-014(s)
03-016(f)	Septic system	Septic system - duplicate of 3-014(s)
03-024	Tank and Associated Equipment	Tank and/or associated equipment
03-025(a)	Oil Trap Sump	Tank and associated equipment (oil trap sump)
03-026(b)	Active Sumps	Sumps
03-036(e)	Aboveground tanks	Aboveground tank
03-036(f)	Aboveground tanks	Aboveground tank
03-036(g)	Aboveground tanks	Aboveground tank
03-036(i)	Aboveground tanks	Aboveground tank
03-045(d)	Aboveground Storage tank	Storage tank (aboveground)
03-050(e)	Inactive Filter Unit	Filter unit
03-051(d)	Soil contamination-oil from leaking compressor	Soil contamination (oil from leaking compressor)
03-052(d)	Storm drainage - non-PCB transformers/capacitors, PCB site	Storm Drainage
03-055(d)	Active Storm Drain	Storm drain
03-056(b)	Container storage area, PCB site	Container Storage Area
03-056(m)	Inactive Drum Storage Area	Drum storage area (inactive)
06-003(g)	Former Detonation Site	Firing site and building TA-6-10
C-06-006	Building TA-6-14 - explosive pressing & storage	Building TA-6-14 used for explosives pressing and storage
08-009(b)	Ind. or san. wastewater treatment	Industrial or sanitary wastewater treatment
C-08-010	Building	Soil Contamination from Former Drum Storage Structure 08-34
C-09-005	Buildings	Soil Contamination from Former Firing Site Structure 09-58
C-09-010	Burn site	Burn site - doesn’t exist
10-001(e)	Detonatioin test area	Detonation test area - doesn’t exist
11-011(c)	Boiler Discharge/Outfall	Boiler discharge
C-11-003	One-time release site (never located)	One-time release site - never located
C-12-006	Pole	Pole - duplicate of 12-004(a)
15-004(e)	Mistakenly called firing site (actually manhole bunker)	Manhole bunker - mistakenly called firing site
15-009(j)	Former Septic System	Septic tank
15-012(a)	Operational Release	Surface disposal (not located) - doesn’t exist
15-012(b)	Former Wash Area	Surface disposal site
15-014(c)	Ind. or san. wastewater treatment	Industrial or sanitary wastewater treatment
15-014(e)	Ind. or san. wastewater treatment	Industrial or sanitary wastewater treatment
15-014(f)	Ind. or san. wastewater treatment	Industrial or sanitary wastewater treatment
15-014(m)	Active Drainline and Outfall	Drainline and outfall
C-15-012	Underground tank (still active)	Underground tank
16-005(b)	Former Septic System	Septic system (removed)

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
16-005(f)	Former Septic System	Decommissioned septic system
16-007(b)	Surface disposal site	Surface disposal site - doesn't exist
16-008(b)	Surface impoundment	Surface impoundment at the TA-16 burning grounds
16-023(a)	Incinerator	Incinerator - doesn't exist
16-025(c)	Abandoned Utility Building	Abandoned utility building and appurtenances
16-025(e2)	Abandoned building, 16-106	Soil Contamination from Former Magazine 16-106
16-025(f2)	Abandoned building, 16-107	Soil Contamination from Former Magazine 16-107
16-025(h2)	Abandoned building, 16-109	Soil Contamination from Former Magazine 16-109
16-026(a2)	Outfall from 16-200	Outfall from Building 16-200
16-026(d2)	Outfall from 16-435	Outfall from Building 16-435
16-026(e2)	Outfall from 16-415	Outfall from Building 16-415
16-026(f2)	Outfall and associated drainline	Outfall from Building 16-413
16-026(g2)	Outfall from 16-285	Outfall from Building 16-285
16-026(h)	Outfall from 16-281	Outfall from Building 16-281
16-026(k)	Outfall and associated drainline	Outfall from Former Building 16-221
16-026(t)	Outfall and associated drainline	Outfall from Building 16-207
16-026(x)	Outfall and associated drainline	Outfall from Building 16-437
16-030(b)	Outfall and associated drainline	Outfall from Former Building 16-343
16-030(e)	Outfall and associated drainline	Outfall from Former Building 16-225
16-030(f)	Outfall and associated drainline	Outfall from Former Building 16-223
18-009(a)	Transformer, PCB site	Transformer - PCB only site
18-009(b)	Transformer	Transformer - PCB only site
18-009(c)	Transformer	Transformer - PCB only site
18-009(d)	Transformer	Transformer - PCB only site
18-009(e)	Transformer, PCB site	Transformer - PCB only site
C-19-001	Soil contamination	Soil Contamination from Former Buildings
20-003(a)	Control building at a firing site	Soil Contamination Associated with Former Control Building at a Firing Site
21-004(d)	Drain line	Drainline from Structure 21-223
21-005	Former Nitric Acid Pit	Disposal pit
21-019(a)	Surface soil contamination area	Soil Contamination from Filter House/Exhaust Stacks
21-019(b)	Surface soil contamination area	Soil Contamination from Filter House/Exhaust Stacks
21-019(c)	Surface soil contamination area	Soil Contamination from Filter House/Exhaust Stacks
21-019(d)	Surface soil contamination area	Soil Contamination from Filter House/Exhaust Stacks
21-019(e)	Surface soil contamination area	Soil Contamination from Filter House/Exhaust Stacks
21-019(f)	Surface soil contamination area	Soil Contamination from Filter House/Exhaust Stacks
21-019(g)	Surface soil contamination area	Soil Contamination from Filter House/Exhaust Stacks
21-019(h)	Surface soil contamination area	Soil Contamination from Filter

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
		House/Exhaust Stacks
21-019(i)	Surface soil contamination area	Soil Contamination from Filter House/Exhaust Stacks
21-019(j)	Surface soil contamination area	Soil Contamination from Filter House/Exhaust Stacks
21-019(k)	Surface soil contamination area	Soil Contamination from Filter House/Exhaust Stacks
21-019(l)	Surface soil contamination area	Soil Contamination from Filter House/Exhaust Stacks
21-019(m)	Surface soil contamination area	Soil Contamination from Filter House/Exhaust Stacks
21-020(a)	Surface soil contamination area	Soil Contamination from Former Filter House
21-020(b)	Surface soil contamination area	Soil Contamination from Former Filter House
21-030	Sump, Identified as New SWMU	Sump
C-21-028	Tank	Soil Contamination from Former Tank
22-014(c)	Unit	Unit does not exist
27-004	Building	Former control building
35-004(e)	Satellite Accumulation Area	Container storage area
35-006		Surface impoundment
35-011(a)		Aboveground storage tanks
35-012(b)	Underground storage tank (inactive)	Underground storage tank
35-018(b)	Former transformer site	Former transformer site - PCB only site
C-35-008	Leaking transformer	Leaking transformer - PCB only site
36-004(f)	Firing site (active)	Firing site
39-002(g)	Storage area (still active)	Storage area
39-007(b)	Storage area, PCB site	Storage area
39-007(c)	Storage area, PCB site	Storage area
39-007(e)	Storage area	Storage area
40-008	HE storage area (decommissioned)	HE storage area decommissioned
46-008 (misc)	Storage area	Storage area - doesn't exist
46-010 (misc)	Storage area	Storage area - doesn't exist
48-002(d)	Container storage area	Container storage
48-008	Transformer leak, PCB site	Transformer leak - PCB only site
48-009	Soil contamination, PCB site	Soil contamination
49-007(a)	Septic system - Area 6	Septic system (Area 6)
49-007(b)	Septic system - HDT area	Septic system (HDT area)
49-009	Aboveground tank	Above ground tank (former location)
52-002(e)	Septic System	Septic tank and seepage pit
C-52-001	Former transformer site, PCB site	Former transformer site - PCB only site
C-52-002	Former transformer site, PCB site	Former transformer site - PCB only site
53-011(a)	Transformer, PCB site	Transformer - PCB only site
53-011(b)	Transformer, PCB site	Transformer - PCB only site
53-011(c)	Transformer, PCB site	Transformer - PCB only site
53-011(d)	Transformer, PCB site	Transformer - PCB only site
53-011(e)	Transformer, PCB site	Transformer - doesn't exist
C-53-001	Transformer	Transformer - PCB only site

Summary of Revised Unit Type Descriptions for Tables P-1, P-2, and P-3

Unit Number	Draft Permit Unit Type	Revised Unit Type
C-53-002	Transformer	Transformer - PCB only site
C-53-003	Transformer	Transformer - PCB only site
C-53-004	Transformer	Transformer - PCB only site
C-53-005	Transformer	Transformer - PCB only site
C-53-006	Transformer	Transformer - PCB only site
C-53-007	Transformer	Transformer - PCB only site
C-53-008	Transformer	Transformer - PCB only site
C-53-009	Transformer	Transformer - PCB only site
C-53-010	Transformer	Transformer - PCB only site
C-53-011	Transformer	Transformer - PCB only site
C-53-012	Transformer	Transformer - PCB only site
C-53-013	Transformer	Transformer - PCB only site
C-53-014	Transformer	Transformer - PCB only site
C-53-015	Transformer	Transformer - PCB only site
C-53-016	Transformer	Transformer - PCB only site
C-53-017	One-time spill, PCB site	One-time spill
C-53-018	One-time spill, PCB site	One-time spill
54-007(b)	Inactive Septic system	Septic system
54-007(c)	Former septic systems	Septic system
54-021	Aboveground oil storage tanks (6) (inactive)	Aboveground oil storage tanks (6)
54-022	Transformer spill (PCB), PCB site	Transformer spill (PCB) - PCB only site
60-001(a)	Storage area (active), PCB_site	Storage Area
60-001(b)	Storage area (active)	Storage area
60-001(c)	Storage area (active)	Storage area
60-005(b)	Drilling mud pits	Drilling mud pit
C-61-001	Transformer storage area-PCB leak	Leak from transformer storage area - PCB only site
73-005	Surface disposal area, septic tanks, and septic pits	Surface disposal site
73-007	Septic tank and pipelines	Septic tank and drainlines
C-73-005(a)	Excavation-septic tank/outhouse trench	Excavation (unlined septic tank / outhouse trench)
C-73-005(b)	Excavation-septic tank/outhouse trench	Excavation (unlined septic tank / outhouse trench)
C-73-005(c)	Excavation-septic tank/outhouse trench	Excavation (unlined septic tank / outhouse trench)
C-73-005(d)	Excavation-septic tank/outhouse trench	Excavation (unlined septic tank / outhouse trench)
C-73-005(e)	Excavation-septic tank/outhouse trench	Excavation (unlined septic tank / outhouse trench)
C-73-005(f)	Excavation-septic tank/outhouse trench	Excavation (unlined septic tank / outhouse trench)