



ENTERED

Permit 3/19/10

STATE OF NEW MEXICO
BEFORE THE SECRETARY OF ENVIRONMENT



IN THE MATTER OF:)
)
APPLICATION OF THE UNITED STATES)
DEPARTMENT OF ENERGY AND)
LOS ALAMOS NATIONAL SECURITY LLC)
FOR A HAZARDOUS WASTE FACILITY)
PERMIT FOR LOS ALAMOS NATIONAL)
LABORATORY, and the)
NOTICE OF INTENT TO DENY A PERMIT)
FOR OPEN BURN UNITS TA-16-388 AND)
TA-16-399 FOR LOS ALAMOS NATIONAL)
LABORATORY.)
_____)

Nos. HWB 09-37 (P)
HWB 10-04 (P)
Consolidated

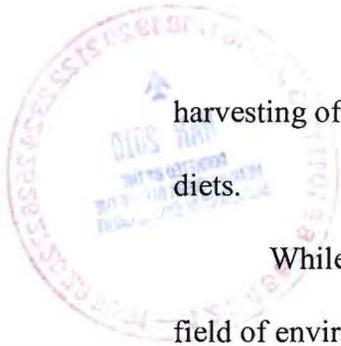
WRITTEN TESTIMONY OF REBECCA J. CRAM

My name is Rebecca J. Cram, and I am an Environmental Scientist and Specialist with the Hazardous Waste Bureau (HWB) of the New Mexico Environment Department (the Department). I am presenting this written testimony on behalf of the Department in the hearing concerning the issuance of a renewal permit for storage and treatment of hazardous waste at Los Alamos National Laboratory (LANL), and the denial of a permit to treat hazardous waste at open burn units at LANL. This testimony is marked as **NMED Exhibit 128**.

I. BACKGROUND AND EXPERIENCE

After attaining a Bachelor of Arts degree in Fisheries and Wildlife Biology from the University of Massachusetts, Amherst, I worked as a research assistant in Astoria, Oregon on a study concerning the migratory patterns of Chinook salmon in the Columbia River. Upon completion of that position, I travelled to West Africa where I served as a Peace Corps volunteer in Cameroon for two years. My primary duty as a volunteer was to work with local subsistence farmers as an aquaculture extension agent to assist in the siting, constructing, managing, and





harvesting of tilapia fish ponds to provide an alternative protein source for farmers' families' diets.

While my original area of education was fisheries and wildlife biology, I entered into the field of environmental policy upon my work as a North Pacific groundfish observer for the National Marine Fisheries Service in Kodiak, Alaska. I furthered my career in environmental science and policy by pursuing a Master of Arts degree in Environmental Science from Clark University in Worcester, Massachusetts; my thesis is being completed. My research, which is based on a Massachusetts' oil spill case study, addresses risk communication from oil spill responders to members of affected communities. I have subsequently held the position of Environmental Scientist and Specialist with the Hazardous Waste Bureau since December 4, 2006. Since then, I have drafted requirements for the closure of hazardous waste management units as well as conditions for the treatment of hazardous waste by open burning in the Applicants' draft renewal hazardous waste treatment, storage, and disposal facility permit. I have reviewed numerous documents submitted to the Department by the Applicants, including, permit applications, including closure plans, permit modification requests, open burning modeling protocols and reports, and corrective action implementation work plans and corrective measures studies; I have drafted responses on behalf of the Department to the Applicants on all of these document types. I also organized, for the Department, seven listening sessions, which are comparable to focus groups, which aimed to understand public concerns regarding the draft LANL hazardous waste renewal permit and elicit feedback from the public on that draft permit.

In addition to my work in the Bureau's permits program, I am a hazardous waste inspector in the Bureau's compliance program. As an inspector, I conduct hazardous waste inspections at various facilities throughout the state to ensure compliance with state hazardous

waste regulations. My duties as an inspector include touring facilities noting potential violations, preparing compliance evaluation inspection reports, and providing regulatory guidance as well as suggestions for better management practices to facility owners. I have led ten inspections and have assisted with eight others.

I am current in my understanding of the hazardous waste regulations and continually educate myself by attending trainings and by keeping abreast of new guidance. A copy of my resume is marked as **NMED Exhibit 129**. It is accurate and up-to-date.

II. SUMMARY

I am here to testify on the Department's preparation of Part 9, "Closure," of the February 2, 2010 "Proposed Permit," (NMED Ex. 1) for Los Alamos National Laboratory. I will summarize the Department's rationale for the terms and conditions in Part 9. I will also briefly discuss some of the requirements of the Closure Plans for the hazardous waste management units at the LANL facility, which are Attachment G to the Proposed Permit.

Since making the Proposed Permit available to the public, the Department has noticed some errors to Part 9, and in the associated Attachment G. Therefore, the Department is, during this proceeding, proposing to make a few revisions to the Permit, including its attachments, to make the necessary corrections. I will note the errors in Part 9 and Attachment G in my testimony, and the changes that the Department proposes. Those sections of my testimony are clearly identified. The specific proposed revisions are set forth in the *List of Proposed Revisions to Part 9 and Attachment G*, which is **NMED Exhibit 130**.

III. PERMIT PART 9 TERMS AND CONDITIONS

A. Introduction

Closure is a process that is initiated by the removal of waste for the purpose of closing a

unit and is concluded upon the Department's approval of certification of closure of that unit. During closure, no hazardous wastes are accepted at a unit, hazardous wastes are completely removed, and all hazardous waste residues are removed or decontaminated from the unit as well as from all structures, components, equipment, and soils at that unit closing. Partial closure at a unit is the closure of a portion of a permitted hazardous waste management unit, for example, the disassembling of a dome structure, and which hazardous waste management operations are still active at that unit.

Part 9 of the Proposed Permit principally adheres to the federal regulations at 40 CFR §§ 264.110 through 264.116, which have been incorporated into the New Mexico Hazardous Waste Management Regulations, 20.1.4.500 NMAC. Throughout my testimony, I will generally refer only to the federal regulations, although I understand that the New Mexico regulations apply. Part 9 of the Proposed Permit generally follows the United State's Environmental Protection Agency's (EPA's) January 1987 *RCRA Guidance Manual for Subpart G Closure and Post-Closure Care Standards* (NMED Ex. 122).

All 24 closure plans, in Proposed Permit Attachment G (*Closure Plans*), adhere to the requirements in Part 9 of the Proposed Permit. They are all quite similar except for Closure Plan Section 5.3, which addresses decontamination processes, and Closure Plan Section 6.1, which identifies unit-specific closure sampling requirements. These sections are unique to each closure plan due to the details of a particular unit.

B. Permit Section 9.1 – Introduction

Permit Section 9.1 (*Introduction*) establishes the categories of units covered by Part 9. The Proposed Permit establishes three categories of units to be closed, based on the closure processes followed for each.

1. First, “regulated units,” specifically the Material Disposal Areas (MDAs) G, H, and L, are to be closed as landfills. They are discussed in the testimony of Mr. James Bearzi.
2. Second, “indoor units (structures and related equipment)” are identified and described in the Applicants’ Part B permit renewal applications (NMED Ex. 5, AR 31720, 16149, 5589, 8932, 11809, 4461). For instance, on pages G.37-G.38 in Attachment G, Section G.4.4 of TA-54 Part B permit renewal application Revision 3 dated June 2003, the Applicants state, “[t]he two Container Storage Units (CSU) 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.”
3. Third, “outdoor units (asphalt or concrete pads and related structures or equipment)” are likewise identified and described in the same application. The Applicants state on pages G.37-G.38 of the same above-referenced document, “[t]he 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” (NMED Ex. 5).

Different types of units are closed by different processes. Indoor units, such as buildings, storage sheds, and transportainers, will most likely be reused; thus certain decontamination and sampling requirements must be conducted. On the other hand, outdoor units, such as asphalt or concrete pads, will not be decontaminated; they will be removed and disposed of as waste, and soils beneath the pad will be sampled for chemical analysis. Moreover, certain outdoor units have structures, like sheds or domes. These structures must undergo decontamination and wipe sampling. Applying the indoor unit closure requirements for structures situated on an outdoor unit is the necessary approach.

Permit Section 9.1 also states that Table J-1 in Permit Attachment J identifies the

category of each permitted unit and clarifies that interim status units are not subject to Part 9 but, instead, to the closure requirements for interim status units in 40 CFR § 265 Subpart G (incorporated by 20.4.1.600 NMAC). In addition, this Section requires the Applicants to close the storage and treatment units in accordance with 40 CFR §§ 264.110 through 264.116, 40 CFR § 264.178, 40 CFR § 264.197, Part 9 and the unit-specific closure plans in Permit Attachment G (*Closure Plans*).

Permit Section 9.1.1 (*Regulated Units*) governs the closure of the regulated units at LANL, namely MDAs G, H, and L. It states that the regulated units are not permitted to accept hazardous or mixed waste, and that they are required to close. It refers only to the closure performance standards in Permit Section 9.2 and the requirements in Permit Sections 9.3 and 9.5.

Permit Section 9.1.2 (*Indoor Units*) governs the closure of indoor units at LANL. It describes what constitutes an indoor unit, specifically a building, a structure, and a room within a building and it identifies the sections of this Proposed Permit Part (9) that are applicable to their closure.

The Department based this terminology in this Permit Section provided by the Applicants in their various Part B permit renewal applications (NMED Ex. 5). Admittedly, this terminology is somewhat confusing. For instance, on page G.26 of Section G.3.4.2 in the TA-54 Part B Permit Renewal Application Revision 3 dated June 2003, the Applicants define TA-54-412 at Pad 1 as, "...a one story *building* that is approximately 220 ft long by 60 ft wide." Similarly, on page G.14 of Section G.2.4.1 of that same document, the Applicants define storage dome 215 at TA-54 Area L as "...an arch frame-supported stressed-membrane *structure*." Then on page G.3 of Section G.1 in the TA-3-29 Part B Permit Renewal Application Revision 0 dated September 1999 (NMED Ex. 5), the Applicants identify TA-3-29 as the Chemistry Metallurgy Research

“Building” in which one container storage unit is located. The section goes on to read that the TA-3-29 container storage unit consists of three storage locations within “Rooms” 9010, 9020, and 9030. Additionally, the Department retains this terminology to be consistent with the current Facility Permit (NMED Ex. 111); Figure E.2 in Attachment E.7 illustrates the TA-54 Area L permitted unit and identifies the domes, canopies, and sheds situated on it as “structures associated with the unit.”

In public comments (comment numbers 99, 100, 102, 104, 108, 109, and 111) submitted by the Applicants September 3, 2009 (AR 31981) on the July 7, 2009 Draft Renewal Permit (AR 31820), the Applicants proposed language to change an “editorial error.” They stated that the indoor units in TA-55 are “areas” within Building 29 and not “rooms.” The Department does not, however, propose to change the terminology primarily because it would contradict the terminology provided by the Applicants in the TA-55 Part B Permit Renewal Application as well as the terminology in the Proposed Permit (NMED Ex. 1) for the units in TA-3.

Permit Section 9.1.3 (*Outdoor Units*) governs the closure of outdoor units at LANL. It describes what constitutes an outdoor unit, and it identifies the sections of the permit that are applicable to their closure. It states there are different types of outdoor units, based on their location in relation to regulated units. Some outdoor units are asphalt and concrete pads situated on the surface and above regulated units, specifically MDAs G and L. Closure processes for these units are set forth in Attachments G.6 through G.12 and Attachment G.15. In certain circumstances, the Applicants may have the option of replacing all or part of the closure requirements of this Part with alternative closure requirements set forth in the March 1, 2005 Consent Order (NMED Ex. 26). The other outdoor units, those not co-located, do not have the same option.

C. Permit Section 9.2 – Closure Performance Standards

Permit Section 9.2 (*Closure Performance Standards*) is addressed in the testimony of Mr. James Bearzi.

D. Permit Section 9.3 – Closure Requirements for Regulated Units

Permit Section 9.2 (*Closure Requirements for Regulated Units*) is addressed in the testimony of Mr. James Bearzi.

E. Permit Section 9.4 – Closure Requirements for Indoor and Outdoor Units

Permit Section 9.4 (*Closure Requirements for Indoor and Outdoor Units*) with its subsections (9.4.1 through 9.4.9), contains the terms and conditions for the closure of the aboveground storage and treatment units, namely, the indoor and outdoor units. Each proposed closure plan (Attachments G.1 and G.4 through G.26) is subject to the requirements in these subsections and reflects the requirements of Part 9.

Permit Section 9.4.1 (*Closure Schedule*) includes a 45 day closure notification requirement. This requirement ensures compliance with 40 CFR § 264.112(d)(1), which requires the owner or operator to give the agency notice 45 days in advance of “the date on which he expects to begin final closure.” The Section explains that the term “beginning of closure” is the initiation of removal of waste for the purpose of closure.

Notification must also be sent by email to the interested parties who have requested email notification. The Department is including this requirement in response to concerns expressed by members of the public as to the lack of transparency in the closure process. This requirement is imposed under the Department’s omnibus authority, 40 CFR § 270.32(b)(2).

The next two requirements of the Section call for the beginning of closure within 30 days of the receipt of the known final volume of hazardous waste, and requiring that all hazardous

waste be removed or treated within 90 days after the receipt of the known final volume of hazardous waste. These provisions ensure compliance with 40 CFR § 264.112(d)(2) and 40 CFR § 264.113(a).

Permit Section 9.4.1.1 (*Time Allowed for Closure*) ensures compliance with 40 CFR § 264.113(b) which ensures that closure activities are not only completed, but are done so within an enforceable and reasonable timeframe.

Permit Section 9.4.2 (*Removal of Hazardous Waste*) restates the requirement to treat or remove from the unit all hazardous waste within 90 days after receiving the known final volume of hazardous waste. It is based upon 40 CFR § 264.113(a).

Permit Section 9.4.3 (*Decontamination and Removal*) requires the Applicants to remove or decontaminate all hazardous waste residues, contaminated containment system components, equipment, structures, and soils pursuant to closure plans that comply with 40 CFR § 264.112(b)(4). By adhering to this condition, closure will ensure that contaminated media, equipment, and other materials associated with the permitted unit are removed and disposed of in a manner that is safe and protective to human health and the environment.

Permit Section 9.4.3.1 (*Decontamination of Surfaces, Structures, and Related Equipment*) imposes decontamination requirements for all surfaces, structures, and related equipment at indoor and outdoor units. Decontamination is to be carried out by pressure-washing or steam-cleaning. The Department believes this method is an effective way to remove hazardous constituents from surfaces (like concrete floors) and equipment because of the high pressures and temperatures of the water or steam applied. This method is a current practice in the industry. These methods also follow EPA decontamination guidance (**NMED Exhibit 131, AR 33179**).

Part 9, in Permit Section 9.4.9 allows the Applicants to propose, on a site-specific basis,

an alternative decontamination method if pressure-washing or steam cleaning is not practicable. The proposal, however, must include a description of the proposed method, an explanation of why the alternative is necessary, and proposed sampling methods, as applicable, including possible additional sample collection. This information is necessary so that the Department may evaluate the validity and effectiveness of the decontamination alternative.

Section 9.4.3.1 also requires the Applicants to decontaminate ceilings and walls to a height of 11 feet, which is a height based on past container stacking practices. The height of two 55-gallon drums, including two pallets, is approximately eight feet. The Department added an additional three feet above the highest stacked drum, calculating that, if a spill or release from the higher stacked drum occurred it is likely to affect at most three feet above that drum. Where certain sheds have ceilings lower than 11 feet, such as TA-54 Area G, the ceiling must be decontaminated.

Proposed Revisions. The Department has noticed that several of the closure plans in Attachment G to the Proposed Permit contain minor errors in the decontamination requirements. Certain closure plans indicate the incorrect decontamination height in Closure Plan Section 5.3.2. They are as follows: Attachments G.1, G.4, G.18, G.19, G.20, G.21, G.22, and G.24. Attachments G.1, G.4, and Attachments G.18 through G.21 state the incorrect height of drums and pallets. In addition, Attachment G.22 proposes an alternative wall height of decontamination and sample collection without providing an explanation for the change. Finally, Attachment G.24 states that decontamination will be conducted on walls to a height of two feet; Attachment G.23, closure plan for the storage tank unit, calls for decontamination and sample collection to 11 feet, and the two units are in the same room. The Department, therefore, recommends changing all of these closure plans so they are in compliance with Permit Sections 9.4.3.1 and

9.4.7.1.i. The *List of Proposed Revisions Part 9 and Attachment G* (NMED Ex. 130) describes these proposed closure plan changes.

Section 9.4.3.1 also addresses the required decontamination method for volatile organic compounds (VOCs). Wipe samples collected from surfaces or equipment are not practical for determining VOC contamination because the VOCs volatilize upon exposure to air. In addition, wipe sampling requires the use of solvents, which generally contain other VOCs, and could affect results. To accomplish removal of possible VOC contamination on surfaces and equipment, the Department has required the Applicants to decontaminate walls, floors, ceilings (if applicable), and equipment at least two times. The Department believes that residual VOCs, if any, would be removed or would volatilize during such decontamination.

Section 9.4.3.1 requires the Applicants to identify in the closure plan which structures, surfaces, and equipment will be decontaminated and how, pursuant to 40 CFR § 264.112(b)(4). This regulation requires the closure plans to provide a detailed description of the steps needed to remove or decontaminate all hazardous waste residues from equipment, structures, and soils. It also states that asphalt pads need not be decontaminated. Since asphalt contains hazardous constituents, decontamination would be impossible.

Permit Section 9.4.3.2 (*Removal of Structures, Related Equipment, and Pads*) contains three main conditions. The first, requiring that structures and equipment that cannot be decontaminated be properly disposed of, ensures compliance with 40 CFR § 264.114. The second requires the Applicants to identify in the closure plan the structures and equipment they plan to remove at closure. Decontamination and sampling are not required if the Applicants remove the structures, surfaces, or equipment and dispose of them as waste accordingly. Since the Applicants must provide a detailed description of the steps needed to remove or

decontaminate all hazardous waste residues and contaminated equipment and components, 40 CFR § 264.112(b)(4), they must advise the Department what items they plan to remove. The third condition requires that, after the structural assessment (*see* Permit Section 9.4.6.2), asphalt pads must be removed. This must be done to enable visual examination of soils beneath the pad to assess the potential for additional soil sampling. Asphalt pad removal was first proposed by the Applicants. Page F.13 of Section F.3.4.3 in Attachment F of the Applicants' TA-54 Part B Permit Renewal Application Revision 3.0 dated June 2003 (NMED Ex. 5), stated, “[i]f the decision is made to not decontaminate the asphaltic concrete...it will be totally or partially removed and disposed of appropriately in lieu of decontamination activities.”

Permit Section 9.4.4 (*Decontamination Verification and Soil Sampling*) requires the Applicants to conduct sampling to ensure decontamination of a unit. This provision ensures compliance with 40 CFR § 264.112(b)(4). The exception for VOCs was explained in connection with Permit Section 9.4.3.1. This subsection also prohibits the use of radionuclide sampling to validate attainment of a closure performance standard because the Department does not consider it a reliable method for indicating a lack of hazardous contamination. Therefore, the Department requires the Applicants to collect samples of the hazardous constituents of concern for all hazardous waste management units.

Permit Section 9.4.4.1 (*Decontamination Verification and Soil Sampling Activities*) requires the Applicants to verify via wipe sampling that surfaces, structures, and equipment at permitted units are decontaminated.

Proposed Revisions. The Department proposes that this Section be revised to state that *wipe, chip, and liquid* sampling, *as appropriate*, shall be employed, since certain closure plans indicate that chip and liquid samples may be collected. Wipe samples, which are collected from

smooth surfaces, and chip samples, which are collected from porous surfaces, like concrete floors, are collected to test for potential surficial contamination; liquid samples test for potential contamination in residual liquids, like those in sumps and drains. Since all types of sampling will or may be used at a unit, the text in this section should be edited to include all three sampling types. The *List of Proposed Revisions Part 9 and Attachment G* (NMED Ex. 130) describes these revisions.

The Department prefers wipe and chip sampling to the sampling of decontamination wash water because of the dilution of potential constituents in the wash water. This subsection also requires that samples be analyzed for metals, semi-volatile organic compounds, and polychlorinated biphenyls. These analytes meet the definition of “hazardous constituent” (Permit Section 1.8). VOCs are not included in this list of targeted analytes because of their volatility.

Section 9.4.4.1 also requires the collection of samples from soils beneath pads at outdoor units because a release from a container on a pad may leach through the pad to underlying soils. The target analytes for soil samples are constituents defined as hazardous in Permit Section 1.8. Volatile organic compounds have been added because there are Department-approved methods for sampling and analyzing these constituents in soils.

Permit Section 9.4.5 (*Management and Disposal Procedures for Waste Generated During Closure*) is taken directly from 40 CFR § 264.114. The listed items are examples of what the Department considers potential wastes generated during closure activities.

Permit Section 9.4.6 (*Records Review and Structural Assessment*) calls for a review of the LANL facility Operating Record and a structural assessment at each permitted unit at closure. The section states that any change to a sampling and analysis plan would result in an

amendment to the closure plan under 40 CFR § 264.112(c)(iii).

Permit Section 9.4.6.1 (*Records Review*) is necessary to achieve compliance with 40 CFR § 264.111 and 40 CFR § 264.112(b)(5) and (6). It requires the Applicants to review the Facility Operating Record so that they may reevaluate the list of hazardous constituents to be sampled and analyzed at closure. This closure activity was initially proposed by the Applicants on page F-10 in Section F.3.3.3 and page F-11 in Section F.3.4.1 of Attachment F in the TA-54 Part B Permit Renewal Application Revision 3.0 dated June 2003 (NMED Ex. 5). This list reflects all hazardous constituents, as defined in Permit Section 1.8. The Department has authorized the Applicants to limit sampling to the hazardous constituents stored or treated at a specific unit. This abbreviated list may be derived from the constituents the Applicants listed in their Part A Permit Renewal Application (NMED Ex. 5), which is reflected in *Permit Attachment B*, and the hazardous constituents identified on the waste profile forms, including all underlying hazardous constituents, for wastes stored or treated at the unit. The Applicants shall update this list at closure because with an abbreviated list, samples can be targeted to analyze specific constituents that were stored or treated at a unit.

The Applicants must also determine if any incidents occurred during operations that would affect the sampling and analysis plan, for example, an event affecting waste containment. Such incidents would be documented in the Facility Operating Record. Some such spill, release, or other hazard may occur before closure and could affect the sampling and analysis plan.

Section 9.4.6.1 also requires that the review be completed within ten days after waste is removed from the unit, which is supported by 40 CFR § 264.112(b)(6). The Department has determined that ten days following the final waste removal deadline is a reasonable and easily ascertainable deadline. Since waste removal must be completed 90 days after the last receipt of

hazardous waste at a unit, and the review can occur simultaneously with waste removal activities, the Applicants have up to 100 days to complete the review. In the event that waste removal is completed sooner than 90 days and the ten day records review timeframe is not feasible for the Applicants, an extension may be requested in accordance with the provision in Proposed Permit Section 1.9.19. The Applicants may propose to abbreviate the list of hazardous constituents only if they can demonstrate that the Facility Operating Record is complete and has been adequately reviewed.

Certain closure plans, specifically Attachments G.6 through G.15, G.24, G.25, and G.26, state that samples should be analyzed for all of the hazardous constituents defined in Permit Section 1.8 because it might not be practical to review the Facility Records and narrow the list of analytes in a reasonable time. For some units, the Facility Records are quite voluminous, spanning a twenty year period. To ensure an adequate review of these Records, a great deal of time will be needed. For example, the time leading up to the closure plan submittals in 2009 was not adequate to conduct a thorough review; nor has the Department had sufficient time to conduct its own review of the Facility Records. Therefore, certain unit-specific closure plans require the sampling of all hazardous constituents, as defined in Permit Section 1.8.

Permit Section 9.4.6.2 (*Structural Assessment*) requires the Applicants to conduct a structural assessment to evaluate a unit's physical condition at closure. This condition is supported by 40 CFR § 264.112(b)(5) and (6). The assessment allows a unit's sampling and analysis plan to be updated with additional sample locations. Because a release of hazardous constituents or damage to a unit, like a crack, gap, or chip to the unit's flooring or building materials, can facilitate the release of hazardous constituents, it is necessary to sample such locations. To identify these locations, one must visually inspect the unit by conducting a

structural assessment. The assessment must be conducted after the completion of waste removal, since a release or damage could happen at **any time** before that. It should also be carried out before decontamination, since this process **may facilitate** a release to environmental media. A structural assessment was first proposed by **the Applicants** on page F-10 in Section F.3.3.3 of Attachment F of the TA-54 Part B Permit Renewal Application Revision 3.0 dated June 2003 (NMED Ex. 5).

Permit Section 9.4.7 (*Closure Plans*) states the basic obligation to submit a closure plan for each unit in accordance with 40 CFR § 264.112. The closure plans have been incorporated into the proposed Permit as Attachments (*Attachment G*). Each closure must include a sampling and analysis plan, in accordance with 40 CFR § 264.112(b)(4).

Permit Section 9.4.7.1 (*Sampling and Analysis Plans*) provides that the Applicants must develop a sampling and analysis plan for the LANL facility. It states the basic requirements that sampling must: (1) verify that all surfaces, structures, and unit related equipment are decontaminated; and (2) determine whether a release of hazardous constituents to environmental media has occurred. The Applicants must: (3) submit in their sampling and analysis plan a list of the hazardous constituents to be sampled; and (4) submit a site sampling plan, which must include specific features of the unit as well as the location and number of samples to be collected. A figure provides a visual reference that aids in the comprehension of not just the layout of a unit, including its dimensions, but also the specific features at a unit, like sumps and stormwater run-off areas. Condition (4) also indicates where specific samples should be collected to ensure compliance with the closure performance standards.

Permit Section 9.4.7.1.i (*Decontamination Verification Wipe Sampling Grid for Indoor Units or Structures*) addresses grid sampling. This subsection requires the Applicants to collect

one sample every 250 square feet in loading and unloading zones and one sample every 900 square feet in container storage or treatment areas. The Department believes the 250 and 900 square foot condition is sufficient to make a determination as to whether a release has occurred primarily because samples will also be collected at biased sampling locations, like areas where the flooring is compromised by a crack or gap or a location of a known release or a visible stain. To be precautionary, the Department will not allow a biased sample location to substitute for a grid sample. The subsection also requires at least one sample from the wall, floor, or (if applicable) ceiling of an indoor unit or structure where a wall, floor, or ceiling is smaller than 900 square feet to ensure that at least one sample is collected from the unit or structure in order to determine decontamination for that unit.

Proposed Revisions. The Department proposes removing “*Wipe*” from the title and the addition of “wipe or chip samples as appropriate” since verification sampling can take the form of either sample type. In addition, certain closure plans indicate the incorrect decontamination height in Closure Plan Section 5.3.2, as my testimony concerning Proposed Permit Section 9.4.3.1 conveyed. These closure plans (Attachments G.1, G.4, G.18, G.19, G.20, G.21, G.22, and G.24) also indicate in Closure Plan Section 6.1 the incorrect sampling height of the walls. The Department proposes that the sampling height in this Section be changed in the above-mentioned closure plans. The *List of Proposed Revisions Part 9 and Attachment G* (NMED Ex. 130) describes these proposed revisions.

Section 9.4.7.1.i calls for an alternative sampling plan if alternative decontamination is going to be conducted. Thus, additional sample collection from a unit, that is, more than one sample per 900 square feet, should be proposed if an alternative decontamination method is used,

such as a manual wash down of the unit's floors and walls. The manual wash down of walls and floors is not as effective at removing potential hazardous constituents from floors or walls as pressure-washing or steam-cleaning. This sampling variance occurs primarily at indoor units that are comprised of an area within a room, specifically, Attachments G.1, G.18, G.19, G.20, G.21, G.22, G.23, and G.24 (units at Technical Areas 3 and 55) in which other waste management operations are conducted and decontamination by pressure-washing or steam cleaning may be problematic.

Section 9.4.7.1.i also requires the collection of samples from some of the locations identified in Permit Section 9.4.7.1.ii.a, where applicable. Certain indoor structures associated with an outdoor unit possess some features of outdoor units, like sumps. Because these structures are at outdoor units and situated on a pad, the Permit requires the collection of soil samples at the locations of these unique features.

Permit Section 9.4.7.1.ii (*Soil Sampling Grid for Outdoor Units*) governs soil sampling for outdoor units. Under 40 CFR § 264.112(b)(4), soil sampling is required to identify contamination at a unit. The sampling locations have been selected as areas where hazardous constituents are most likely to accumulate and locations that the Applicants recognized as areas of concern in past closure plans. For instance, on page F-11 in Section F.3.4.1 of Attachment F in the TA-54 Part B Permit Renewal Application Revision 3.0 dated June 2003 (NMED Ex. 5) states, “[b]ased on the review of the operating record (*e.g.*, spills) and an evaluation of structural areas of potential concern (*e.g.*, sumps, stained areas, low areas), preliminary decontamination focused on these areas may be conducted prior to the overall decontamination of the CSU.”

Proposed Revisions. The Department proposes several revisions to this provision: (1) remove from the section header “*Grid*” replace it with “*Requirements*” and add “*Storage*,” (2)

remove header **9.4.7.1.ii.a** entitled, “*Outdoor Storage Units;*” and change the language to this section’s first paragraph. This section originally had two subsections with different sampling requirements; one addressed outdoor storage units and the other outdoor treatment units, specifically the open burn units. Since the open burn units are no longer a part of the Proposed Permit, this section should only address soil sampling requirements for outdoor storage units. The Department also proposes removing in all applicable closure plans the “a” from all references to “Permit Section 9.4.7.1.ii.a.” The *List of Proposed Revisions Part 9 and Attachment G* (NMED Ex. 130) describes these proposed revisions.

Permit Section 9.4.8 (*Amendment of the Closure Plan*) is necessary to achieve compliance with 40 CFR § 264.112(c) and 264.112(c)(2).

Permit Section 9.4.9 (*Variance to Decontamination Verification Standards*) allows the Applicants to request a variance from the decontamination verification wipe standard. This variance applies only to indoor and outdoor units where hazardous constituent concentrations are not less than the detection limits for a constituent’s analytical method in that unit’s closure plan. In other words, it applies where wipe samples reflect an exceedance in the closure performance standards. Certain materials, like paint, inherently have hazardous constituents, like lead. Thus, there is a possibility that a wipe sample may detect lead at concentrations greater than the detection limit. The variance allows the Applicants the opportunity to show to the Department that the detected lead, for example, is a result of the inherent lead in the paint and not from a release of hazardous waste.

F. Permit Section 9.5 – Closure Certification Report to the Department

Permit Section 9.5 (*Closure Certification Report to the Department*) requires the Applicants to submit a report to the Department upon completing the closure of any permitted

unit. This provision ensures compliance with 40 § CFR 264.115. The closure certification establishes that all appropriate activities are conducted to complete closure, including sampling analytical results and all other supporting documentation. The Applicants are required to propose a permit modification to alter Tables J-1 and J-3 in the Proposed Permit when closure of a hazardous waste management unit has been certified by the Department. This modification would move the reference to the applicable unit from Table J-1 (*Active Portion of the Facility*) to Table J-3 (*Closed Units not in Post-Closure Care*). This modification is a Class 1 modification. It is not necessary to require an additional modification for units transitioning from being active to post-closure care because Permit Section 10.1 already requires a permit modification.

IV. CLOSURE PLANS

A. Proposed Changes to all Closure Plans

The following items are changes the Department proposes to make to all of the closure plans (Attachment G of the Proposed Permit). These changes are reflected in NMED Exhibit 130.

1. Section 4.1

Add sentence to Section 4.1 in order to be consistent with the requirements in Permit Section 9.2. An explanation regarding the Department's rationale for the closure performance standards was provided in Mr. James Bearzi's testimony.

2. Section 4.2

Propose removing "wipe" from the 4th paragraph in Section 4.2 entitled "Closure Schedule" since it limits the closure plan to one type of sampling method. After the review and assessment, liquid, chip, or wipe sampling may be required at certain units.

3. “Closure Schedule” Table

Change language pertaining to ‘completion of the records review and structural assessment’ schedule so that the closure plans are consistent with the closure schedule conditions in Permit Section 9.4.6.1.

4. Changed language in closure plan table regarding the disposal of potential low-level radioactive waste at TA-54 Area G

Change language in the table entitled, “Potential Waste Materials, Waste Types, and Disposal Options” regarding low level radioactive waste disposal. Mr. James Bearzi provided testimony concerning the Department’s rationale for this closure plan change.

5. Sections 5.3 and 5.3.1

Editorial changes in order to remove redundancies; Section 7.0 already addresses how wastes generated at closure will be managed. Changes make these sections clearer and more accurate.

B. Proposed Changes to Certain Closure Plans

The following bulleted items are changes the Department proposes to make to certain closure plans in Attachment G of the Proposed Permit. These changes are reflected in NMED Exhibit 130.

1. Attachment G.13 (TA-54 Area G Shed 8) Sections 5.3.2 and 6.1

Remove the decontamination and sampling conditions from these sections since Section 5.3.1 states that the walls, the roof, the concrete pad, the sump, and all materials associated with the pad, will be removed after the assessment. Therefore, decontamination and sample collection from these areas are not necessary. However, in order to be in compliance with Permit Section 9.4.7.1.ii(5), and to be consistent with other unit-specific closure plans with sumps, a soil sample

must be collected from beneath where the sump was located.

2. Section 5.3.2 - Attachments G.1, G.18, G.19, G.20, G.21, G.22, G.23, and G.24

Add the phrase “left in place or” to the first paragraph of this section in Attachments G.1 and G.24 since items referred to in this section may either be reused or left in place thus decontaminated.

Add the word “manual” to the second paragraph in this section to all eight closure plans as a descriptor of the kind of alternative decontamination method the Applicants are proposing. Also, remove two sentences from the third paragraph of this section to all eight closure plans because they are not relevant to the Applicants’ reason for needing the alternative decontamination method of manually washing down walls and floors.

Add the phrases “from steam cleaning or pressure washing” and “[t]herefore, wipe-down washing, rather than steam cleaning or pressure washing...,” to Attachments G.18, G.19, G.20, 21, 22, 23 in order to make the language in these closure plans consistent. This language was included in the Applicants’ submittal to the Department of Attachments G.1 and G.24.

3. Edit the header in Section 6.1

Remove ‘soil sampling’ from the header in Attachments G.1, G.4, G.16, G.18, G.19, G.20, G.21, G.22, G.23, G.24, and G.25 since these units are indoors and the potential for soil samples is very low.

Also, remove “wipe” from the header, and the first sentence, since chip or liquid samples may be collected from some of these units at closure. If collection of these additional types of samples is required, then the header of the section, as it currently reads, would no longer reflect all potential sample types.

Remove ‘wipe’ from the header in Attachments G.6, G.8, G.10, G.12, G.13, G.14, and

G.15 since chip or liquid samples may be collected from some of these units at closure. Also, add “Sampling Activities” to the header in Attachment G.19 to make it consistent with the other closure plans.

4. Section 6.1 Regarding Potential Liquid or Chip Sample Collection

Add sentence to Section 6.1 of Attachments G.1, G.4, G.8, G.18, G.19, G.20, G.21, G.22, G.23, G.24, and G.25 to address the potential for chip or liquid sampling at closure.

5. Potential for liquid sample collection at the time of the ‘assessment’ and not ‘sample collection’

Remove “at the time of sample collection” and replace with “at the time of the assessment” in Attachments G.1, G.4, G.8, G.10, G.12, G.13, G.14, G.15, and G.16 which refers to the timing of potential liquid sample collection. Some units have features, like sumps, which will be removed after the assessment but before sampling activities, like in Attachment G.13 (storage shed 8). It is therefore important for liquid samples to be collected during the assessment; otherwise, the feature may have already been removed and any potentially present liquids will not have been sampled.

6. Section 5.3.2 in Attachment G.1, G.4, G.16 regarding plugged drains “before” decontamination

Change language to note that drains should be plugged “before” decontamination not “during” decontamination.

7. Sections 2.0, 5.3.1, and 5.3.2 in Attachment G.10

Add a sentence to the end of Section 2.0 that states that hazardous waste is not stored in the two storage sheds. The Applicants have told the Department that these sheds are used to store equipment, not hazardous waste. Also, remove “two storage sheds” from these sections

since decontamination and sampling activities are not applicable.

8. Section 5.3.1 in Attachment G.8 regarding reference to (8) storage sheds

Remove reference to the “eight storage sheds” from Section 5.3.1. The Applicants state in Section 5.3.2 the sheds will be reused and that decontamination and sampling activities (Section 6.1) will be employed.

9. Attachment G.16 for TA-54 West Indoor regarding ‘slide gate valve’

Remove sentence from Section 2.0 regarding the slide gate valve. No liquid wastes should be managed or stored at this unit according to Permit Attachment A, Section A.4.3.

10. Changes to Attachment G.6 (TA-54 Area G Pad 1)

Changes to Sections 2.0, 5.3.1, 5.3.2, 6.0, and Figures G.6-1 and G.6-2 based on the Applicants’ March 2010 PMR submittal (NMED Ex. 125).

11. Changes to Attachment G.11 (TA-54 Area G Pad 10)

Changes to Sections 2.0, 5.2.2, 5.3.2, 6.1, and Figures G.11-1 and G.11-2 based on the Applicants’ March 2010 PMR submittal.

12. Changes to Attachment G.12 (TA-54 Area G Pad 11)

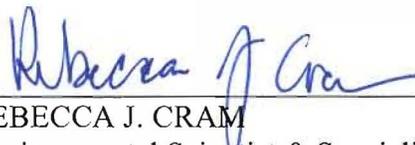
Changes to Sections 2.0, 6.1, and Figure G.12-1 based on the Applicants’ March 2010 PMR submittal (NMED Ex. 125).

13. Changes to Attachment G.15 (TA-54 Area L)

Changes to Sections 2.0, 5.3.1, 6.1, and Figures G.15-1 and G.15-2 based on the Applicants’ March 2010 PMR submittal (NMED Ex. 125).

This concludes my testimony.

I, Rebecca J. Cram, swear under penalty of perjury that the foregoing is true and correct.



REBECCA J. CRAM
Environmental Scientist & Specialist
Hazardous Waste Bureau
New Mexico Environment Department
Las Cruces, New Mexico

ACKNOWLEDGEMENT

Subscribed and sworn before me this 18th day of March, 2010 by Rebecca J. Cram.



Notary Public



OFFICIAL SEAL
PRISCILLA HOLGUIN
NOTARY PUBLIC - STATE OF NEW MEXICO

My commission expires:

My commission expires: 05/29/11

05/29/11

