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RON CURRY  
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DEPUTY SECRETARY

**CERTIFIED MAIL  
RETURN RECEIPT REQUESTED**

January 31, 2007

David Gregory, Federal Project Director  
Los Alamos Site Office  
Department of Energy  
528 35<sup>th</sup> Street, Mail Stop A316  
Los Alamos, New Mexico 87544

David McInroy, Deputy Project Director  
Environmental Services  
Los Alamos National Laboratory  
P.O. Box 1663  
Mail Stop M992  
Los Alamos, New Mexico 87545

**RE: APPROVAL WITH MODIFICATIONS FOR THE  
INVESTIGATION/REMEDIATION WORK PLAN FOR MATERIAL DISPOSAL  
AREA B, SOLID WASTE MANAGEMENT UNIT 21-015, AT TECHNICAL  
AREA 21, REVISION 1,  
LOS ALAMOS NATIONAL LABORATORY (LANL)  
EPA ID #NM0890010515,  
HWB-LANL-06-007**

Dear Messrs. Gregory and McInroy:

The New Mexico Environment Department (NMED) is in receipt of the Department of Energy and the Los Alamos National Security, LLC's (collectively, the Permittees) *Response to the Notice of Disapproval for the Investigation/Remediation Work Plan for Material Disposal Area B, Solid Waste Management Unit 21-015, at Technical Area 21* dated October 2006 and referenced by LA-UR-06-6917/EP2006-0780 and the *Investigation/Remediation Work Plan for Material Disposal Area B, Solid Waste Management Unit 21-015, at Technical Area 21, Revision 1*, dated October 2006 and referenced by LA-UR-06-6918/EP2006-0783 (collectively referred to as the "IRWP"). NMED has reviewed these documents and hereby issues this Approval with Modifications for the IRWP.



11030

### General Comments

The following comment was submitted by the Pueblo of San Ildefonso: "MDA G is even closer to Pueblo land. Essentially this option removes waste from unlined pits farther away from the Pueblo and places it in unlined pits closer to the Pueblo, and increases the risk to our people and resources."

While NMED acknowledges that certain radioactive wastes are subject to an exemption in the Resource Conservation and Recovery Act (RCRA) and therefore outside NMED's regulatory sphere, NMED urges the Permittees to evaluate the risk of disposal of low level radioactive waste (LLRW) at MDA G compared to the risk of transporting such waste to an off-site disposal facility. This evaluation should be shared with the Pueblo of San Ildefonso, NMED, and all other interested parties, prior to implementation of the approved Work Plan.

### Specific Comments

#### **1) Section 2.2.2, Subsurface Tuff, page 3, paragraph 1:**

**Permittees' Statement:** "Three subsurface investigation campaigns were conducted at MDA B. These occurred in 1966 (Kennedy 1966, 00540), 1983 (LANL 1991, 07529), and 1998 (unpublished data, presented in Appendix B of this report, section B-4.3.1)."

**NMED Comment:** The data from the 1998 investigation were never formally reported to NMED until they were submitted as part of the Historical Investigation Report (HIR) for MDA B. The data were therefore not subject to NMED review and approval. The Permittees must clarify the sources of the data presented in Appendix B, Section B-4.3.1 of the IRWP in the SAP.

#### **2) Section 4.3.2, Environmental Protection Monitoring, page 13:**

**Permittees' Statement:** "Activities within the excavation enclosure will be monitored using real-time continuous air monitoring (CAM) systems or similar devices. The CAMs will survey airborne radioactive particles inside the work zone and outside the enclosure at specific locations around the site."

**NMED Comment:** The Permittees must monitor specifically for beryllium in addition to airborne radioactive particles and airborne particulates. The frequency and methods for beryllium monitoring must be included in the Permittees' *Documented Safety and Analysis Plan*. The Permittees must provide a copy of this document to NMED at least 30 days prior to the commencement of field work.

**3) Section 4.4, Excavation of Disposal Trench Contents, page 14, paragraph 2:**

**Permittees' Statement:** "If the screening results indicate that the material is not hazardous waste and potentially meets residential cleanup levels, representative samples will be collected and submitted through the Laboratory's Sample Management Office (SMO) for analysis of TAL metals, radionuclides (by gamma spectroscopy), isotopic uranium, isotopic plutonium, tritium, strontium-90, VOCs, SVOCs, dioxins/furans, PCBs, explosive compounds, perchlorate/nitrate, and cyanide."

**NMED Comment:** In addition to the analyses proposed by the Permittees to verify that lay-back and overburden material is nonhazardous, meets residential cleanup levels, or both, the Permittees must also submit samples for alpha spectroscopy analysis. The Permittees must collect one sample for every 50 cubic yards of lay-back or overburden material intended for use as backfill, in order to confirm that the material is nonhazardous, meets the residential cleanup levels, or both. Any overburden/lay-back materials returned to the excavation as fill must be placed in the deeper portions of the excavation.

**4) Section 5.9.1, Drilling Methods, page 24:**

**Permittees' Statement:** "Boreholes will be drilled with a drill rig capable of continuous coring and deep borehole production. All drilling activities will follow appropriate Laboratory guidance documents and protocols to ensure that health and safety issues are reviewed and addressed during field operations. Boreholes will be drilled initially using a hollow-stem auger. In the event that boreholes cannot be completed by this method, air-rotary drilling with a split barrel sampler will be used. This will ensure that the desired depth can be achieved and that continuous core can be collected."

**NMED Comment:** The Permittees must notify and gain prior approval from NMED if the use of drilling fluids other than air becomes necessary for the advancement of drilling at MDA B.

If the Permittees fail to implement the modifications outlined in this letter, NMED will automatically rescind this approval. NMED reserves the right to modify methods and techniques in the IRWP based on the results and observations made during the first phase of work or based on solutions to specific field problems resolved at other corrective action sites. In accordance with Section XI.A of the March 1, 2005 Order on Consent (Order), all submittals must be in the form of two paper copies and one electronic copy. Attached is NMED's response to public comment for your review.

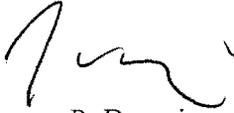
Messrs. Gregory and Mc

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Should you have any questions, please contact Kathryn Chamberlain at (505) 476-6046.

Sincerely,



James P. Bearzi

Chief

Hazardous Waste Bureau

JPB:kmc

cc: K. Chamberlain, NMED HWB  
D. Goering, NMED HWB  
D. Cobrain, NMED HWB  
T. Skibitski, NMED DOE OB  
S. Yanicak, NMED DOE OB, MS J993  
G. Rael, DOE LASO, MS A316  
L. King, EPA 6PD-N  
A. Phelps, LANL ADEP, MS J591  
file: Reading and LANL TA-21 '07 [SWMU 21-015]

NMED Response to Public Comment  
 Material Disposal Area B, Los Alamos National Laboratory  
 January 31, 2007

COMMENT NUMBER	COMMENTER <sup>1</sup>	COMMENT	NMED RESPONSE
1	1	1. MDA G is like MDA B in that the disposal pits are unlined, which does not seem to be an improvement.	NMED agrees that if the Permittees (DOE and LANS) elect to transport waste generated from remediation activities at MDA B to MDA G for disposal, the disposal method by itself will not significantly improve protection of human health and the environment compared to the method of disposal that was originally used at MDA B. However, any waste generated at MDA B will be carefully segregated, and some of that waste might be disposed of at MDA G. Such waste would be non-liquid and non-chemical in nature. Although NMED discourages this option, NMED has no authority to prohibit it because the waste would only be contaminated with radionuclides or otherwise be radioactive. The U.S. Department of Energy (DOE) would therefore have sole discretion to use MDA G as a disposal option for this waste.
2	1	2. MDA G is even closer to Pueblo land than MDA B is. Essentially the option of using MDA G removes waste from unlined pits farther away from the Pueblo and places it in unlined pits closer to the Pueblo, and increases the risk to our people and resources.	NMED agrees that MDA G is closer to Pueblo land than MDA B. NMED encourages, but cannot require, the Permittees to evaluate the risk of disposal of radioactive waste at MDA G compared to the risk of transporting such waste to an off-site disposal facility. The results of the risk evaluation should be shared with the Pueblo of San Ildefonso, NMED and all other interested parties. See also response to comment #1.

<sup>1</sup> Commenter #1 – Pueblo of San Ildefonso

Commenter #2 – Nuclear Watch New Mexico, Concerned Citizens for Nuclear Safety, Miguel Pacheco, Marian Naranjo, Embudo Valley Environmental Monitoring Group, and Peace Action New Mexico

Commenter #3 – Los Alamos County

NMED Response to Public Comment  
 Material Disposal Area B, Los Alamos National Laboratory  
 January 31, 2007

COMMENT NUMBER	COMMENTER <sup>1</sup>	COMMENT	NMED RESPONSE
3	2	<p>We are very concerned that NMED has not provided itself with adequate time to thoroughly review the public comments before the due date for NMED action, which is only five days from when public comments are due. Two of those days comprise the weekend. We understand that NMED staff will be working this weekend to meet the Consent Order due date of January 31, 2007. In the future, NMED must give itself adequate time to review the public comments.</p> <p>We found the IRWP to be inconsistent in several areas including; sampling locations; the timing for the Sampling and Analysis Plan (SAP) and backfilling the trench.</p> <p>Please ensure that LANL makes all reference documents readily available online and in hard copy.</p>	<p>NMED has thoroughly reviewed and carefully considered all comments received; additional time was not necessary. NMED is providing this response to comments in conjunction with the Approval with Modifications on the Notice Date included in the March 1, 2005 Compliance Order on Consent (Consent Order) schedule as updated (November 2006).</p> <p>See response to comment number 8 below.</p> <p>All reference documents are part of the Administrative Record and are available for review at NMED's Hazardous Waste Bureau library during normal business hours. Although not all documents are currently available online, NMED is in the process of making the entire administrative record for the LANL facility available online. This project should be finished within 12 months.</p>

<sup>1</sup> Commenter #1 – Pueblo of San Ildefonso

Commenter #2 – Nuclear Watch New Mexico, Concerned Citizens for Nuclear Safety, Miguel Pacheco, Marian Naranjo, Embudo Valley Environmental Monitoring Group, and Peace Action New Mexico

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4	2	Because commenting on Consent Order deliverables is a new process, please state that any errors or omissions will not be used as precedence by LANL in future deliverables.	NMED does not consider errors or omissions in any document as setting precedent for any corrective action activity. Similarly, errors or omissions in public comment in no way are considered in a negative light for future public comments on other submittals. Each submittal, and the public comment received on it, stands on its own merit.
5	2	<p><b>Amount of Waste</b>            What is the estimated amount of waste to be generated for each specific type of waste? Will LANL proceed if, for example, more waste, or more waste of a more expensive type is generated than originally estimated? Are the figures given in appendix D, Table D-1 still the working numbers?</p> <p>The cleanup of MDA V comes to mind. MDA V generated 20 times more waste than originally estimated. Will LANL continue the work if it turns out that 20 times more waste is discovered than was estimated? Please describe the regulatory process under the Consent Order if such event should occur.</p>	The Permittees provided estimates of anticipated waste volumes in IRWP Appendix D, Table D-1. Actual volumes of waste will not be known until the waste has been excavated and characterized. The Permittees are required to remove and properly dispose of all excavated waste, regardless of the volume generated. No waste deposited in the trench(es) will be left in place; however, site characterization is necessary to determine whether all contaminated media (e.g., soil, rock, or sediment) present can be removed. No additional regulatory process is required, as the IRWP considers such a possibility.

<sup>1</sup> Commenter #1 – Pueblo of San Ildefonso

Commenter #2 – Nuclear Watch New Mexico, Concerned Citizens for Nuclear Safety, Miguel Pacheco, Marian Naranjo, Embudo Valley Environmental Monitoring Group, and Peace Action New Mexico

Commenter #3 – Los Alamos County

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Material Disposal Area B, Los Alamos National Laboratory  
January 31, 2007

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6	2	<p><b>Development of Implementation Plan</b>  The IRWP states “To assess possible issues, plan and control the work environment, and prevent damage to the surrounding environment, an implementation plan will be developed.” IRWP, p. vi. When will the implementation plan be completed? Where would one find the deadline for it to be completed? In the IRWP? In the Consent Order? Will it be a draft document? How will the public provide input?</p>	<p>The Permittees have developed an implementation plan that addresses health and safety concerns. The commenter may request a copy of the plan from the Permittees. NMED requires that a health and safety plan that complies with all applicable local, state and federal regulations be prepared and implemented prior to the start of any corrective action activity. NMED does not review such health and safety plans for the purpose of approval. Additional implementation plans, or a plan that addresses issues beyond health and safety, are not required by the Consent Order, and so are not subject to NMED review, approval, or public comment.</p>
7		<p><b>Use of quality-controlled laboratories</b>  What are the requirements for the laboratories to be selected for this project? At what point will a statistically significant number of false positive results result in action by NMED? What are the consequences under the Consent Order?</p> <p>Are there a minimum or maximum number of samples specified? What is the estimated total number of samples that will be taken over the length of this project? Will the NMED retain any split samples?</p>	<p>The Permittees are required to comply with Section IX.B and IX.C of the March 5, 2005 Order on Consent with respect to sample collection, handling, and analytical laboratory reporting and quality assurance /quality control (QA/QC) requirements. Sampling methods and results that do not meet the standards defined in the Consent Order will be rejected by NMED and the Permittees will be required to resample in accordance with the Consent Order Section IX requirements.</p> <p>Section 4.10 of the IRWP establishes the approach for sample collection. The number of samples will be based, in large part, on observations and field screening conducted during removal activities. NMED retains the right to collect split samples at any corrective action or waste management site at Los Alamos National Laboratory. Such decisions are made on a case-by-case basis.</p>

<sup>1</sup> Commenter #1 – Pueblo of San Ildefonso

Commenter #2 – Nuclear Watch New Mexico, Concerned Citizens for Nuclear Safety, Miguel Pacheco, Marian Naranjo, Embudo Valley Environmental Monitoring Group, and Peace Action New Mexico

Commenter #3 – Los Alamos County

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8	2	<p><b>SAP</b>            Data about the residual radiological and hazardous chemical concentrations will come from samples to be taken from the fill, soil, or rock in the side walls of the excavation at a later date based on the approved SAP from the native tuff in the bottom of the excavation. These data will be used to assess the nature and extent of potential residual contamination beneath and surrounding the MDA disposal trenches.” IRWP, p. 2. What is the justification for the delays in sampling until after the SAP is approved?</p> <p>If there are volatile organic compounds (VOCs) in the fill, soil or rock in the sidewalls of the excavation, they will have dissipated the sampling area before. We request a deadline of 24 hours for approval by NMED of the SAP.            However, the IRWP contradicts itself by stating: “Excavations will be backfilled upon complete removal of all buried waste to prevent ongoing hazards associated with open excavations and to prevent the heavy equipment from tracking any residual contamination outside of the excavation.” IRWP, p. 8. If the later quote is the situation, then when will the samples for the approved SAP for the residual contamination be completed? This contradiction must be resolved before the IRWP is</p>	<p>The MDA B site investigation will be conducted in two phases. The first phase includes the removal of the buried waste and accessible soil and tuff containing contaminant concentrations greater than residential cleanup levels. The Sampling and Analysis Plan (SAP) will address the second phase of investigation which is intended to characterize contaminant releases that have migrated beyond the areas accessed during removal activities. The timing of submittal of the SAP is necessary because the scope of work in the SAP will be based on historical information and data acquired during the first phase of corrective action. NMED cannot approve the SAP until the results of the removal action have been reviewed and evaluated.</p> <p>Collection of confirmation samples at the limits of the excavation(s) will be conducted during removal activities, thus minimizing volatilization of any contaminants. These samples therefore do not require approval of the SAP prior to collection. Backfilling of the remedial excavations will occur after all waste and accessible contaminated soil/tuff has been removed, and excavation confirmation sampling described above has been completed. A summary of the results of the first phase of work will be submitted to NMED as part of the SAP. The second phase of investigation is anticipated to include subsurface drilling explorations that will be conducted after the SAP has been reviewed and approved by NMED. Borings can be drilled through a filled-in excavation without compromising the representativeness</p>

<sup>1</sup> Commenter #1 – Pueblo of San Ildefonso

Commenter #2 – Nuclear Watch New Mexico, Concerned Citizens for Nuclear Safety, Miguel Pacheco, Marian Naranjo, Embudo Valley Environmental Monitoring Group, and Peace Action New Mexico

Commenter #3 – Los Alamos County

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		<p>approved. Further, the IRWP states: "The objective of the SAP will be to define the nature and extent of any residual contamination at MDA B by using data from previous RFI work and by removing the contaminant source (buried waste) and allowing sampling beneath the waste trenches. The nature and extent of any residual contamination will be characterized by sampling directly beneath the former waste disposal trenches after the wastes ha[ve] been removed and possibly also by drilling subsurface boreholes." IRWP, p. 8.</p> <p>a. Does the previous RFI work include the 1998 unpublished data as presented in Appendix B, Section B-4.3.1? IRWP, p. 3. If so, it must be clearly stated in the document.</p> <p>b. NMED must state specifically the requirements for collecting data for the SAP. Does the sampling include the fill, soil or rock in the side walls of the excavation or the [fill soil or rock] directly beneath the former waste disposal trenches after excavation? Regardless, the sampling must include sampling in the downgradient areas of MDA B.</p>	<p>of samples.</p> <p>NMED will require the Permittees to clarify the sources of the data presented in Appendix B, Section B-4.3.1 in the SAP.</p> <p>The SAP addresses the second phase of investigation. The first phase includes confirmation sampling of the limits of the remedial excavations. Downgradient (or downslope) locations outside of the remedial excavations will be addressed in the scope of work for the second phase of work, which will be included in the SAP.</p>

<sup>1</sup> Commenter #1 – Pueblo of San Ildefonso  
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9	2	<p><b>Land Transfer</b>            At the December 7, 2006 public meeting, it was announced that the Los Alamos County School Board intends to transfer parcel A-8-A, which is adjacent to MDA B for residential housing. Construction may begin during the excavation of MDA B. Residents may begin living in the housing during the excavation of MDA B. We are concerned about possible exposure of construction workers and residents, including children.</p>	<p>The Permittees intend to control releases from the site by constructing a negative pressure enclosure to capture dust and airborne contaminants generated during remediation activities. In addition, the Permittees will conduct continuous air monitoring in the vicinity of MDA B and along DP Road leading to the site. The Permittees are obligated to mitigate any airborne exposure hazards that could potentially affect surrounding areas. The air monitoring and airborne release control measures are described in the Permittees' "Documented Safety Analysis Plan", which the Permittees have committed to complete by Summer 2007.</p>
10	2	<p><b>EXECUTIVE SUMMARY</b>  <i>All buried waste will be removed and disposed of at appropriate disposal facilities according to the characteristics of the waste.</i></p> <p>What are the proposed transportation routes from MDA B through Los Alamos County to the appropriate disposal facilities? More information, including maps, schedules, notification protocol, and adequate HAZMAT training need to be made available to communities along the transportation routes to the appropriate disposal facility.</p>	<p>The Permittees have developed plans for transporting remediation wastes to the proper disposal facilities. The "Transportation Plan for TA-21" is in preparation and the Permittees have committed to make the plan available to the public in the summer of 2007. Waste from operations at MDA B may be shipped along any transportation route designated for commercial truck traffic. Notification protocols, training of emergency response personnel, and schedules are outside the purview of NMED.</p>

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11		<p><b>2.0 Background</b>            The IRWP states “the complete operational history relevant to MDA B during the 1944 to 1948 time frame that MDA B was open is presented in LANL’s “MDA Historical Context” document (LANL 2006, <b>draft</b>).” We are concerned about a new practice by LANL where it relies upon draft documents to support both legal and regulatory requirements for providing information to the public. When will the MDA Historical Context document be finalized? Will it be incorporated into the IRWP for MDA B? Will this final document be available to the public? An unpublished MS thesis must also not be used as a reference. IRWP, p. 30.</p>	<p>A final document entitled <i>MDA Historical Context</i> will not be incorporated into the IRWP. NMED is unable to provide a date for the Permittees’ release of a final document with this title. NMED does not rely exclusively on historical documents, draft or otherwise, provided by the Permittees with regard to corrective actions. In nearly all circumstances, NMED requires the Permittees to collect site data including field measurements and samples from all potentially affected media both at, in the vicinity of, and downstream and downgradient from, the unit(s) of interest.</p> <p>The unpublished master’s thesis entitled “Geophysical Survey of MDA B Waste Disposal Site at DP Mesa, Los Alamos, New Mexico” (Thavoris, 2001) that is referenced in the IRWP is in NMED’s Administrative Record. The study was one of four geophysical studies referenced in IRWP section 2.1. NMED did not rely exclusively on this or any other study in making its decision. However, all documents referenced by the Permittees must be submitted to NMED for inclusion in the Administrative Record.</p>

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12	2	<p><b>3.2.3 Hydrogeology 3.2.3.1 Infiltration</b>  <i>Under unsaturated conditions, most of the open fractures beneath the site are expected to be completely dry, and vadose zone water will exist in the tuff matrix only. ... However, modeling studies predict that when fractures disappear at contacts between stratigraphic subunits, when fracture fills are encountered, or when fracture coatings are interrupted, fracture moisture is absorbed into the tuff matrix (Soll and Birdsell 1998, 70011, pp. 193--202).</i></p> <p>Is there anything other than modeling to rely on? Are there any known fractures? Will the entire depth of any fracture encountered be excavated? We all know how seasonal and sporadic precipitation is in New Mexico. Dry fractures this year may be wet next year. Will fractures be investigated even though they may be dry this year?</p>	<p>IRWP section 3.2.2 (Cliff Retreat and Fractures) discusses fractures at TA-21. Fractures observed during excavation activities will be mapped and investigated to the extent possible during implementation of the first phase of work; however, there is a practical limit to the extent of any excavation, and it is possible that fractures may extend beyond that limit. Phase 2 of the MDA B site investigation will include an evaluation of fractures identified both during the Phase 1 activities and during subsurface explorations conducted as part of the Phase 2 site investigation.</p>

<sup>1</sup> Commenter #1 – Pueblo of San Ildefonso  
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13	2	<p><b>3.2.3.3 Regional Aquifer</b>  <i>The main aquifer in the Los Alamos area rises westward from the Rio Grande within the Santa Fe Group and into the Puye Formation beneath the central and western portion of the Pajarito Plateau. The depth of the aquifer decreases from about 1200 ft bgs along the western margin of the plateau to about 600 ft bgs along the eastern margin (see Figure 3.2-2). The regional aquifer was encountered in deep wells near MDA B at 5870 ft asl in well R-7, at 5850 ft asl in well Otowi-4, and at 5835 ft asl in well R-8, (Figure 3.2-2), resulting in an approximate 1260-ft depth to groundwater at MDA B.</i></p> <p>Please use either 'bgs' or 'asl', not both, in the same document.</p> <p><i>The groundwater in the main aquifer is separated from any alluvial or perched groundwater by 350–620 ft of tuff and volcanic sediments (Purtymun 1995, 45344, p. 29).</i></p> <p>Why is this sentence in here? Are we to assume that the 350-620 ft of tuff and volcanic sediments are protecting the aquifer and that there are no pathways?</p>	<p>NMED understands “asl” to mean “above sea level” and “bgs” to mean “below ground surface”. Both acronyms are included in the acronym list in IRWP Appendix A. NMED acknowledges that use of the two terms to describe relative vertical position can cause confusion; however, the use of both terms does not create inaccuracies in the IRWP.</p> <p>NMED views this sentence as a statement regarding distance and does not interpret the sentence in terms of permeability or local lithologic conditions.</p>

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14	2	<p><b>Table 4.1-1</b>  LANL states in Table 4.1-1, Item 14 that they are not going to complete a drainage sediment investigation because they have already reported that work in the Los Alamos/Pueblo Canyon Investigation Report. NMED must require LANL to conduct a drainage sediment investigation, especially following the excavation. Consent Order Specifications and LANL Proposed Alternatives. Item 17, LANL states it will not conduct any regional groundwater investigations as part of the IRWP. “Regional groundwater investigations are being conducted in accordance with the hydrogeologic work plan (LANL 1998, 595999), approved by NMED, and “Los Alamos Canyon and Pueblo Canyon Intermediate and Regional Aquifer Groundwater Work Plan” (LANL 2003, 82612). LANL states it will “duplicate the work being performed under the hydrogeologic work plan” and LANL 2003 referred to above. In order to protect public health and the environment, NMED would be wise to reject LANL’s reasoning and hold open the possibility that there will be a need to drill an additional regional groundwater well due to findings of contamination. Further, the regional groundwater investigations did not meet the site-specific needs for monitoring groundwater contamination from MDA B. Also, none of the regional wells produce water samples that are reliable for the detection of the MDA B</p>	<p>The IRWP addresses the removal of buried waste and contaminated media to depths accessible by excavation equipment used for this first phase of work. The SAP proposing the scope for Phase 2 of the site investigation will address subsurface exploration at depths below the reach of the excavation equipment. The results of the Phase 2 investigation will be used to evaluate the need for further investigation and remediation, possibly including investigation of drainages.</p> <p>Groundwater monitoring is currently being conducted under the Los Alamos Canyon watershed monitoring section of the Interim Facility-wide Groundwater Monitoring Plan and is not part of this phase of work at MDA B. Groundwater investigations in the vicinity of MDA B also are being conducted under other NMED-approved workplans submitted pursuant to the Consent Order. The Consent Order and state law gives NMED the authority to require additional corrective actions, including installation of monitoring wells, if information arises suggesting such actions are needed. The commenter did not provide any attachments with its comments, so NMED is unable to respond with any specificity to comments relating to attachments. Phase 1 work at MDA B is restricted to removal of waste and contaminated soil/tuff. This first phase of work does not incorporate subsurface investigations that include groundwater, which will be addressed either in subsequent investigations at MDA B, if necessary, or through other enforceable Consent Order documents.</p>

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		<p>contaminants including trace metals and radionuclides. Please see the attachment. In Items 18, 19 and 20, LANL states that they aren't going to conduct groundwater sampling because it would "duplicate the work required under Section IV.A.3 of the Order." Section IV.A.3 requires the preparation of the Interim Facility-Wide Groundwater Monitoring Plan. NMED must require that Items 18, 19 and 20 be part of the IRWP. The NMED NOD for the LANL Well Screen Analysis Report (WSAR) discusses the WSAR as an unreliable measure of the reliability of the LANL characterization wells. The attachment shows that none of the regional wells in the Interim Facility-Wide Groundwater Monitoring Plan produce reliable water samples for the detection of MDA B contaminants. Further, the wells are too distant from MDA B to detect contamination from MDA B.</p>	<p>NMED disagrees that none of the regional wells produce reliable results. An assessment of the potential for groundwater contamination from releases from MDA B will be based, in part, on the evaluation of the presence of contamination in the vadose zone accomplished in the phase 1 and phase 2 work at the site.</p>
15	2	<p><b>4.14 Borehole Sampling Activities</b>  <i>Subsurface pore-gas samples will be submitted for the analysis of VOCs and tritium. If any volatile contaminants are detected, a second round of samples will be collected approximately 30 days later. The decision about installing pore-gas monitoring wells will be based on the results of this sampling. The boreholes will remain open until the decision to install vapor monitoring wells is made. A long-term vapor monitoring program will be developed, as appropriate.</i></p>	<p>NMED requires most borings used for vapor phase contaminant sampling to be left open pending a determination of the usefulness of the borehole for vapor monitoring. The Permittees have been required to collect vapor samples at all sites where vapor-phase contamination has been identified as an issue during field investigation activities. Where errors were made, or where a need is identified based on site conditions, the Permittees have been required to collect additional data.</p> <p>NMED has required the Permittees to clean out slough</p>

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		<p>Leaving the boreholes open is unacceptable. The Standard Industry Practice is to make vapor measurements in real time and immediately install monitoring wells or properly plug (backfill) and abandon the borehole. We are aware that LANL and NMED have left open unminded deep boreholes across Area G during activities for the Consent Order.</p> <p>Some of the boreholes have partially collapsed. Now money is not available to redrill the boreholes for either proper sealing or for use as vapor monitoring wells. If any borehole is left open for a future decision, there must be a plan for watching the borehole, and money available for mobilizing drilling equipment to deal with the need to properly backfill and abandon the borehole.</p>	<p>(e.g., at MDA V) or extend borings (e.g., at MDA G) to collect additional information or for installation of vapor monitoring wells at other sites at LANL. It is cost effective, and in some circumstances appropriate, to leave selected vadose zone borings open until their usefulness as monitoring points is evaluated based on available data or, in some cases, required additional data. NMED agrees that in some cases where sloughing renders borings unusable, it is standard industry practice to abandon the borings with appropriate methods. NMED and the Permittees have attempted to resolve sloughing issues, while continuing to take advantage of existing borings to collect additional information that includes installation vapor monitoring wells in some borings. While NMED considers cost when evaluating corrective action needs, to date, no decisions have been made with respect to vadose zone borings based solely on the availability of funds nor have the Permittees been allowed to circumvent necessary work based on a lack of funding.</p>

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16	2	<p><b>4.13 TA-21 Industrial Waste Line</b>  <i>The TA-21 industrial waste line, located along the southern boundary of MDA B, may be encountered during the excavation of some portions of MDA B, although portions of the line were removed in 2003 (LANL 2003, 91446). The remaining 2,300-ft portion of the TA-21 industrial waste line, located along the southern boundary of MDA B, will be removed.</i></p> <p>Please point this waste line out on any map included in this Work Plan. If it runs along the southern boundary of MDA B, were any soil samples taken when it was installed? How deep is this waste line?</p>	<p>NMED has limited documentation of the waste line in the Administrative Record. The Permittees have not provided a map to NMED that depicts the remaining portions of the pipe line. The line transported radioactive liquid waste to TA-50. Provided that this waste did not contain a hazardous waste component, it is subject to the Atomic Energy Act exemption in RCRA. NMED does not have documentation of sample collection and analysis conducted during installation of the pipe line; however, it is likely that sampling was not conducted during construction. Information on the pipeline depth is in NMED's Administrative Record in a report entitled "TA-21 Acid Waste Line Removal Completion Report" (February 2003).</p>
17	2	<p><b>4.3.2 Environmental Protection Monitoring</b>  <i>Activities within the excavation enclosure will be monitored using real-time continuous air monitoring (CAM) systems or similar devices. The CAMs will survey airborne radioactive particles inside the work zone and outside the enclosure at specific locations around the site.</i></p> <p>Beryllium must be specifically monitored for.</p>	<p>NMED agrees that the Permittees must monitor for beryllium. NMED will require the Permittees to monitor for beryllium as part of the air monitoring program.</p>

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18	2	<p><b>4.3.3 Emergency Response</b>  <i>An emergency response plan will be prepared to establish a program that optimizes a safe and informed response to emergency situations, with the intent of protecting project personnel, the public, the environment, and property, in the event of hazardous substance releases, employee contamination, accidents, injuries, fires, or natural disasters.</i></p> <p>Is there a comprehensive emergency response plan available? Other communities may be affected. Is there an emergency response plan, along with equipment, to meet the needs and the personnel to respond?</p>	<p>The Permittees have developed an emergency response plan that addresses the planned activities at MDA B. The Permittees plan, entitled “Emergency Response and Management Plan” will be made available by the Permittees in Summer 2007.</p>
19	2	<p><b>4.4 Excavation of Disposal Trench Contents</b>  <i>Overburden material and material excavated in order to lay back the side slopes of the excavation will be initially screened to determine if it must be considered waste or if it is potentially suitable for being returned to the excavation site based on a nonhazardous waste determination and meeting residential cleanup levels. Representative samples will be collected from the overburden and lay-back material as it is excavated. Screening analyses will be performed using laboratory procedures and instrumentation and will include TAL metals, SVOCs, VOCs, and gamma-emitting radionuclides. If the screening analyses indicate that there is potential for hazardous waste and/or contaminants</i></p>	<p>NMED will clarify as a condition of IRWP approval that the Permittees may only use clean (uncontaminated) imported backfill or must demonstrate to NMED that any overburden to be returned to the excavation as backfill meets residential cleanup standards based on extensive chemical and radionuclide laboratory analyses. Backfill that appears to be uncontaminated based on field screening must be verified to be clean by submittal of samples for laboratory analysis. NMED will require that overburden materials returned to the excavation as fill be placed in the deeper portions of the excavation.</p>

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		<p><i>to be present above residential cleanup levels, the material will be handled as waste. If the screening results indicate that the material is not hazardous waste and potentially meets residential cleanup levels, representative samples will be collected and submitted through the Laboratory's Sample Management Office (SMO) for analysis of TAL metals, radionuclides (by gamma spectroscopy), isotopic uranium, isotopic plutonium, tritium, strontium-90, VOCs, SVOCs, dioxins/furans, PCBs, explosive compounds, perchlorate/nitrate, and cyanide. The material will be stockpiled within the boundary of the AOC until analytical results are received and reviewed. If the analytical results indicate hazardous waste and/or <b>that contaminants exceed residential cleanup levels</b>, the material will be processed as waste. If results indicate that hazardous waste and cleanup goals are met, the material will be used to backfill the excavation. The placement of the material as backfill will be tracked so that analytical data may be linked to specific areas of the site.</i></p> <p><i>All trenches will be <b>backfilled with clean fill material</b> (i.e., appropriate soil and/or rock either from an offsite source or from excavated overburden and side slope material that has been sampled and <b>determined to be nonhazardous</b> and meets cleanup goals) after waste is removed.</i></p> <p><i>Fill will consist of appropriate soil and/or rock material <b>that can be verified as uncontaminated,</b></i></p>	

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		<p><i>either from an off-site source or from excavated overburden and side slope material that has been sampled and determined to be uncontaminated.</i></p> <p>These three paragraphs are an example of inconsistencies in terminology used. Will the backfill material be below residential cleanup levels, be clean, be nonhazardous, or be uncontaminated? None of these terms may be found in the glossary. We recommend that LANL be required to rewrite this section of the IRWP so that it is consistent and clear and provide copies to the public making comments on the IRWP.</p> <p>Also, please explain why is the sampling of radionuclides limited to gamma spectroscopy?</p>	<p>NMED will clarify the acceptable contaminant levels for overburden materials that may be used as backfill as a condition of IRWP approval. The clarification will include the requirements specified in the preceeding paragraph. The frequency of sampling for overburden to be used as backfill will be a minimum of one sample for every 50 cubic yards of material.</p> <p>The reference to testing samples using gamma spectroscopy is related to field screening. Subsequent laboratory analysis will include more extensive radionuclide analyses (gamma spectroscopy, isotopic plutonium, uranium, tritium and strontium 90). NMED will also require that the samples be analyzed by alpha spectroscopy.</p>

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20	2	<p><b>5.1 Excavation Methods</b>  <i>To minimize waste, the overburden and lay-back material will be characterized and, if it is determined that it is uncontaminated, will be used as backfill when the excavation is complete. The waste excavation consists of the following activities:</i></p> <ul style="list-style-type: none"> <li>• <i>The overburden will be removed from above the waste material from the surface down to the top of the buried waste. This material will consist of topsoil and/or fill material and, in some areas, asphalt, and will require minimal screening and segregation.</i></li> <li>• <i>Excavation will continue until field screening (using laboratory methods) indicates that all undisturbed geologic material has levels below residential cleanup levels for TAL metals, SVOCs, and VOCs, as determined by NMED (NMED 2005, 90802 or current version) or EPA (EPA 2005, 91002 or current version), and levels below residential cleanup levels for radionuclides (LANL 2005, 88493 or current version). Excavation will continue until residential cleanup levels are met or until deemed impracticable, as determined by NMED.</i></li> </ul>	No comment was included relating to this specific IRWP reference.

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21	2	<p><b>5.7 Excavation Backfilling and Surface Restoration Methods</b>  <i>Once all waste is removed, the waste trenches will be backfilled and compacted and clean soil cover material will be replaced over the affected area. Clean fill material will be shipped in from off-site. All affected surfaces will be restored to their original grade (approximately), reseeded, and a straw mulch or appropriate erosion-control fabric will be applied to help stabilize the surface. To prevent future subsidence, the backfill material will be compacted to the extent practical. Best management practices will be established to monitor and prevent erosion.</i></p> <p>There is a discrepancy here. Will all fill material be clean and be shipped in from off-site? This is in contrast to Section 4.4 that states, <i>“If results indicate that hazardous waste and cleanup goals are met, the material will be used to backfill the excavation.”</i> Are there any plans to permanently mark the area? Would there be any reason permanently mark this area during the backfilling process? Six inches of red pumice spread over the area at a depth of about a foot or so would warn future excavators.</p>	<p>In IRWP Section 4.4 (Excavation of Disposal Trench Contents) the Permittees commit to recording the location of overburden containing any residual contamination that is used as backfill by stating, “The placement of the material as backfill will be tracked so that analytical data may be linked to specific areas of the site”. NMED does not believe it is necessary to physically mark the area, nor is there a requirement in the Consent Order to physically mark sites where residential cleanup levels are not achieved.</p>

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22	2	<p><b>5.9.1 Drilling Methods</b>  <i>Boreholes will be drilled with a drill rig capable of continuous coring and deep borehole production. All drilling activities will follow appropriate Laboratory guidance documents and protocols to ensure that health and safety issues are reviewed and addressed during field operations. Boreholes will be drilled initially using a hollow-stem auger. In the event that boreholes cannot be completed by this method, air-rotary drilling with a split barrel sampler will be used. This will ensure that the desired depth can be achieved and that continuous core can be collected.</i></p> <p>NMED must specifically state that drilling fluids or even water cannot be used in the boreholes. There must be a specific statement that the air rotary coring will be performed without use of any water-based drilling fluids or drilling foams. Further, if the air rotary boreholes collapse, then it is necessary to use casing advance drilling methods to stabilize the borehole from collapse.</p>	<p>To date no vadose zone drilling at TA-21 has required the use of any drilling fluids other than air. NMED does not expect that the use of drilling fluids will be necessary at MDA B. However, NMED will include as a condition of IRWP approval that the Permittees to request approval from NMED if circumstances cause them to consider the use of any fluids other than air.</p>

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23	2	<p><b>5.9.5 Pore-Gas Sampling Methods</b>  <i>Subsurface pore-gas samples will be collected from all boreholes in accordance with the current version of SOP-6.31, after allowing for the equilibration of pore gases at the completion of drilling activities.</i></p> <p>We are concerned about this section as not being acceptable. For the continuous coring auger drilling, the pore gas measurements need to be taken at discrete intervals in the boreholes during drilling. During the RCRA site characterization activities at LANL, equipment was designed and used for this purpose. If it is necessary to use air drilling for the boreholes, then the air returned from the drilling must be monitored in “real time” for volatile contaminants.</p>	<p>IRWP Section 5.9.5 describes the proposed methods for pore-gas sampling. NMED agrees that this approach will likely need to be modified in the SAP, which will address specific drilling requirements for Phase 2 of the site investigation at MDA B. NMED will review the proposed pore-gas sampling approach in the SAP and evaluate the need for any changes to the proposed sampling methods at that time. Required modifications would be based on observations made during the Phase 1 work at MDA B and solutions employed at other sites where similar conditions and problems have occurred.</p>
24	2	<p><b>B-2.2.7.2 Radioactive Waste</b>  <i>At least one truck, contaminated with fission products from the Trinity test, is buried in MDA B (DOE 1986, 08657).</i></p> <p>Where will this go? Is this an historic artifact? Ebay?</p>	<p>The Permittees are required to characterize all waste (including the truck) generated during this phase of work prior to determining the appropriate disposal facility. Selling the truck through an online auction would not be an acceptable disposal pathway for the truck.</p>

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25	3	1) Characterization of adjoining property A8-B: It is the County's understanding that the adjoining property A8-B, that was withheld from transfer to the Los Alamos County School District to be used as a buffer zone to MDA B, would be tested for lateral contamination prior to the cleanup of MDA B. The proposed work plan indicates that lateral contamination will be evaluated only after removal of waste from MDA B. The County understands that this land will be used as a staging area during the MDA B cleanup, but requests that characterization of A8-B through boring and sampling be performed prior to waste removal at MDA B. The reason for this request is to have A8-B become available for transfer as early as possible. By determining whether lateral contamination has occurred early in the process, the decision about the suitability of the site for transfer can be accelerated.	The Permittees are required to remove any materials that contain residual contamination at concentrations greater than residential cleanup levels. It is anticipated that contaminated materials, if present adjacent to the west end of the MDA B trench(es), will be removed during waste removal operations. The area will be used by the Permittees as a staging area during excavation activities. This may result in some contamination of the site by the placement of waste on the property. Phase 2 of the site investigation includes subsurface drilling explorations that will be greatly facilitated by the previous removal of waste and contaminated media and by the information collected during removal operations. Since the possibility exists that contaminated media will need to be removed from Parcel A8-B, drilling prior to any necessary removal activities would delay rather than hasten cleanup of the property.
26	3	2) Timing: NMED and DOE must be committed to quick cleanup actions and review of documents and sufficient funding. Too often through this process either the work gets started late or the review of the reports that identify the plans for remediation or steps taken to remediate a site take an inordinate amount of time to review. The County knows that all of the parties are committed to cleanup MDA B. However, the County needs the parties to undertake the actions in accordance with the schedule provided in the Compliance Order on Consent in March 2005.	The MDA B remedy completion report submittal date has been moved from April 2011 in the Consent Order Schedule to December 2010 in the most recent revised Consent Order schedule (November 2006). Since the nature and extent of contamination at the site has not yet been characterized, neither NMED, the Permittees, nor anyone else can determine whether it is possible to further compress the cleanup schedule. NMED agrees that DOE should commit to adequate funding for the site work. Failure to do so could result in an enforcement action by NMED. To date, all parties have met the

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		<p>Extensions of time to cleanup the site is not an "accelerated" cleanup as the presentation to the community on this issue would suggest. Further delay in the cleanup does not help the citizens of Los Alamos and the State of New Mexico. Los Alamos County requests that DOE commit sufficient funds to cleanup the contamination on an accelerated schedule.</p>	<p>Consent Order deadlines with respect to MDA B.</p>
27	3	<p>3) Coordination: As the cleanup evolves, the County requests that DOE, LANS and NMED keep the County informed on the progress of the cleanup activities and milestones; and where acceleration of cleanup or missed deadlines occur and the reasons for the actions occurring. The County is committed to working with the parties to expedite a complete and safe cleanup. The County would like to receive a copy or a summary of the quarterly status reports that DOE/LANL submits to NMED on this cleanup action.</p>	<p>All corrective action conducted under the Consent Order is included in NMED's Administrative Record. The Administrative Record is available to the public for review. NMED encourages the County to contact NMED project staff for MDA B as desired to discuss the progress of corrective actions at the site. Los Alamos County should contact DOE/LANS for inclusion on any DOE or LANS information distribution lists.</p>

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28	3	4) Shipping of hazardous and radioactive waste. Currently, multiple shipments are planned per day. DOE, LANL and NMED should coordinate with Los Alamos County to ensure that these shipments occur at times and through routes that accomplish the parties' goals and are not disruptive to the community. Any impact on local roadway infrastructure should be avoided whenever possible and repairs budgeted into project budgets where impacts are likely.	The Permittees are required to comply with all applicable local, state and federal regulations during their corrective action activities at MDA B, including those relating to transportation of wastes. However, NMED lacks authority to impose requirements on the Permittees that are beyond NMED's regulatory and statutory authority. NMED strongly urges the Permittees and the County to coordinate transportation routes and shipping schedules to accommodate the County's and other commenters' concerns.
29	3	5) Land Use Controls. As cleanup progresses, any land use control discussions that evolve from this risk based cleanup should be coordinated with the County.	The Permittees have committed to remediate this site to residential cleanup levels. If such standards are achieved, NMED will issue a Corrective Action Complete Without Controls determination allowing for unrestricted land use. NMED agrees that any other land use scenario contemplated for the site should be discussed with the County.

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30	3	6) Support the Cleanup. The County supports the cleanup actions, as it is critical for the continued health safety and welfare of the community.	No response necessary.

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