

**Response to the "Notice of Disapproval, Corrective Measures Evaluation Report (CME) for
Material Disposal Area G, Solid Waste Management Unit 54-013(b)-99, at Technical Area 54,
Los Alamos National Laboratory (LANL) EPA ID No: NM0890010515, HWB-LANL-08-025,"
Dated November 20, 2008**

INTRODUCTION

To facilitate review of this response, the New Mexico Environment Department's (NMED's) comments are included verbatim. Los Alamos National Laboratory's (LANL's or the Laboratory's) responses follow each NMED comment. This response contains data on radioactive materials, including source, special nuclear, and byproduct material. Information on radioactive materials and radionuclides, including the results of sampling and analysis of radioactive constituents, is voluntarily provided to NMED in accordance with U.S. Department of Energy policy.

GENERAL COMMENTS

NMED Comment

1. *Through approval of the Investigation Report (June 8, 2007), and in accordance with Section IV.C.1.e of the March 1, 2005 Order on Consent (Order), NMED has determined that the Permittees have completed characterization of contamination in the vadose zone at MDA G. The Permittees have not, however, completed characterization of groundwater conditions in the vicinity of MDA G and potential groundwater contamination at the site. In a letter dated December 7, 2007, NMED stated that selection of remedies at MDAs G, H, and L would depend on reliable groundwater data. NMED therefore required an accelerated well-drilling program in order to meet Consent Order milestones. The letter required installation of wells R-39, R-41, R-37, R-40, and R-38 no later than March 31, 2007, May 31, 2007, March 31, 2008, May 31, 2008, and July 31, 2008, respectively. To date, these wells have not been installed.*

NMED's April 5, 2007 letter to the Permittees again stated the importance of reliable groundwater data and that there were an insufficient number of wells available for regional groundwater monitoring at TA-54. NMED directed the Permittees to conduct an evaluation of the existing wells, and install additional wells intersecting the regional aquifer. In order for the Permittees to meet relevant Order milestones, the letter also imposed requirements for rehabilitation of wells R-20, R-22, and R-32. To date, the Permittees have not complied with all of these requirements.

As stated in the April 5, 2007 letter, "[g]roundwater monitoring beyond reproach is crucial not only to protection of this vital resource, but also to the remedy selection process for the larger solid waste management units the Permittees must address to stay in compliance with the Order." The Permittees are unable to provide an accurate description of the groundwater conditions beneath MDA G in accordance with Section XI.F.6.b of the Order, and therefore have not met the requirements set forth in Section VILD.2 (specifically numbers 4, 5, and 7). For these reasons, NMED cannot conduct a complete technical review of the CME Report for MDA G until these data are provided.

LANL Response

1. In accordance with XI.F.6 of the Consent Order, the corrective measures evaluation (CME) report for Material Disposal Area (MDA) G included "a section on subsurface conditions observed during previous subsurface investigations." While both NMED and the Laboratory have recognized a need for additional groundwater data to support remedy selection, the Compliance Order on Consent (the Consent Order) requirement is to describe conditions defined by previous investigations, which the document did. Therefore, the Laboratory has met the requirement set forth in Section VII.D.2 (specifically, numbers 4, 5, and 7).

However, the Laboratory acknowledges and appreciates that insufficient groundwater data are available to support NMED's complete technical review of the CME report for MDA G. That was the basis for the Laboratory's July 31, 2008, request for extension for submittal of the CME report. NMED's denial of the extension request resulted in the Laboratory's submitting the CME report with the understanding that key groundwater data were outstanding. The wells described in NMED's Comment #1 in this notice of disapproval (NOD) are a Laboratory priority and are currently being drilled, constructed, or developed, with the exception of R-41, for which drilling is scheduled to begin in January 2009. These wells are those that were proposed as part of the revised Technical Area 54 (TA-54) well network evaluation the Laboratory submitted in October 2007. Additionally, well rehabilitation has now been completed at wells R-20 and R-32, and R-22 is scheduled for rehabilitation in April 2009.

Under the current drilling schedule, a TA-54 groundwater network summary report that includes groundwater data from at least one round, and in some cases two rounds, of groundwater sampling from the new and rehabilitated wells will be submitted to NMED by June 2009. The Laboratory proposes summarizing the results of the periodic monitoring report in section 3.0, Site Conditions, of the revised MDA G CME report.

NMED Comment

2. *Section 4.2 of the approved Corrective Measures Evaluation Plan for Material Disposal Area G, at Technical Area 54, Revision 2 (CME Plan) states that "[a]n initial screening of alternatives will be conducted in the CME to reduce the number of alternatives to be evaluated in detail. This screening will be qualitative and will eliminate those alternatives that may not prove feasible to implement, that rely on technologies unlikely to perform satisfactorily or reliably, or that do not achieve the target corrective measure objectives within a reasonable period of time."*

According to the CME Report, 12 corrective measure alternatives were evaluated based on their ability to meet regulatory threshold and other qualitative screening criteria. "Four of the 12 alternatives met the screening criteria and were retained." The Department approved use of a screening process to reduce the number of alternatives. However, the Permittees failed to discuss or explain in the CME Report how alternatives were eliminated or retained through the initial screening process, as required by the approved CME Plan. Specifically, the CME Report does not describe why eight of the 12 remedy alternatives are not feasible to implement, rely on technologies unlikely to perform satisfactorily or reliably, or do not achieve the target corrective measure objectives within a reasonable period of time. The Department is therefore unable to evaluate whether or not the screening process was conducted properly and alternatives appropriately eliminated or retained. The Permittees must revise the CME Report, where appropriate, to justify why eight of the 12 remedy alternatives were eliminated.

LANL Response

2. The Laboratory will incorporate additional language into the CME report that explains how alternatives were eliminated or retained such that the process is transparent to the reader. In particular, sections 6 and 7 and Table 7.4-1 will be revised to further justify the elimination of alternatives from moving ahead in the evaluation process.

NMED Comment

3. *The Permittees have not considered all potential remedies for MDA G. According to Table 7.4-1, Corrective Measure Alternative Qualitative Screening Matrix, Alternatives 2D, 3, 4C and 5A should be retained as viable remedies because they pass all four screening criteria (i.e., responsive to threshold criteria, implementable, performs, timely). Additionally, the Permittees have not considered the option of an engineered landfill or a Corrective Action Management Unit (CAMU) to contain or treat on-site excavated waste.*

LANL Response

3. The Laboratory evaluated the 11 corrective action alternatives that were presented in the NMED-approved MDA G CME plan, Revision 2. An additional alternative was included and evaluated in the MDA G CME report for a total of 12 alternatives.

The Laboratory will provide additional justification for eliminating Alternatives 2D, 3, 4C, and 5A from the detailed analyses as described in the response to Comment 2. In addition, two alternatives not originally proposed for evaluation in the NMED-approved CME plan will be evaluated. An engineered landfill operated as a Subtitle C landfill and as a corrective action management unit will be added to the list of alternatives and evaluated.

Locating an engineered landfill on Laboratory property will require a feasibility study to ensure a site exists that meets Section 20.4.1.500 of New Mexico Administrative Code, incorporating 40 CFR 264.18, Location Standards. In addition, depending on the feasibility reports recommended site(s), geologic and hydrogeologic investigations may be required to verify site conditions and to access seismic considerations.

Since implementability is required in both the initial screening process and the detailed analysis, the Laboratory recommends performing the initial screening of both alternatives while deferring the evaluation of implementability (including required feasibility and geologic/hydrogeologic investigations) to the detailed analysis. This will speed up the initial screening of these new alternatives and initiate the feasibility study and investigations as part of the detailed evaluation, if needed.

NMED Comment

4. *Appendix G, specifically Attachments G-1 through G-4, do not provide adequate supporting information. The Permittees must revise Attachments G-1 through G-4 to include documentation that supports each of the line item cost estimates.*
 - a) *The Permittees have not included long-term groundwater monitoring, vadose zone monitoring, or CMI Work Plan and Report preparation in their cost estimates for Alternatives 1B, 2B, or 2C. The Permittees must revise the cost estimates in Appendix G to include groundwater monitoring, vadose zone monitoring, and CMI Work Plan and Report preparation costs for the evaluated Alternatives.*

b) Some, but not all of the acronyms identified in Appendix G are defined in the list of acronyms provided in Appendix A. For example, in Attachment G-1, Cost Estimate Details for Alternative 1 B, the acronyms used in the "Units of Measure" column are not defined (i.e., LF, LS, ACR). The Permittees must define all acronyms used throughout the CME Report.

LANL Response

4. The cost estimates provided in Appendix G included costs for the preparation of the corrective measures implementation (CMI) work plan and report. In the revised CME report, the Laboratory will include an evaluation of costs for groundwater and vadose-zone monitoring over a 100-yr institutional-control period. In addition, acronyms used in Appendix G will be included in Appendix A.

NMED Comment

5. *The Permittees state that prior to implementation of corrective measures, transuranic (TRU) waste stored at Area G container storage units (CSUs) will be excavated and disposed of off-site at the Waste Isolation Pilot Plant (WIPP) and the surface CSUs will be closed under the Resource Conservation and Recovery Act (RCRA) closure process. NMED agrees that these activities are not part of the CME; however, implementation of these activities will affect the schedule established in Section 11.0. The TRU waste must be removed and the surface CSUs must be closed prior to implementation of a remedy. The Permittees must address removal of TRU waste and closure of the surface units as it pertains to the general schedule for implementation of a remedy at MDA G.*

LANL Response

5. The Laboratory agrees that transuranic (TRU) waste must be shipped to Waste Isolation Pilot Project and surface units closed at MDA G before a remedy can be implemented. A revised closure plan submitted to NMED in 2007 addresses the closure of Resource Conservation and Recovery Act storage surface units at MDA G. Upon review and approval by NMED, the Laboratory can begin to coordinate closure of surface units with corrective action. A detailed schedule can be provided within the CMI work plan tailored to implementing the remedy selected by NMED.

NMED Comment

6. *The Permittees have developed and used a system model to evaluate potential long-term human health impacts from contaminants released over time at MDA G. NMED will not select a preferred remedy based on conclusions drawn by the use of models. If a containment alternative is selected as a preferred remedy, NMED will require and rely on monitoring data to evaluate the performance of the selected remedy. NMED may in the future require additional remedial action at the site based on the results of long-term monitoring.*

LANL Response

6. The Laboratory recognizes that monitoring of the vadose zone and the groundwater beneath MDA G will be an important consideration in selecting a remedy as well as demonstrating the performance of the selected remedy. The Laboratory anticipated that the specific information on the nature and location of monitoring and monitoring thresholds will be established as part of the CMI process. The Laboratory also proposes that, in addition to site characterization data, modeling is a beneficial tool for establishing a monitoring network and associated performance monitoring metrics.

NMED Comment

7. *The Permittees state in the CME Report that soil vapor extraction (SVE) is a remediation technology retained for consideration as part of the proposed remedy. The Permittees also state that "[a] pilot study of SVE is currently being conducted at MDA G to evaluate its effectiveness. The report detailing the findings of the pilot study will be provided to NMED by October 31, 2008." NMED is in receipt of the Pilot Test Report for Evaluating Soil-Vapor Extraction at Material Disposal Area G at Technical Area 54 (SVE Report), dated October 31, 2008; it does not contain enough information to evaluate the use of SVE at MDA G. A Notice of Disapproval (NOD) detailing the deficiencies of the SVE Report and requiring resubmittal of the SVE Report is forthcoming. The Permittees must revise the CME Report to include the results from the revised SVE Report.*

LANL Response

7. The Laboratory acknowledges that NMED intends to issue an NOD on the "Pilot Test Report for Evaluating Soil-Vapor Extraction at Material Disposal Area G at Technical Area 54." The Laboratory will revise the soil vapor extraction report based on NOD comments and will incorporate data from the revised SVE report into the CME report. To this date, the Laboratory has not received the NOD from NMED. The Laboratory assumes the revised SVE report will require approval from NMED before any data in the report are incorporated in the CME report.

Attachment B-1

MDA G CME Report Schedule
Attachment B-1

ID	Task Name	Duration	Start	Finish	Sep '08	Oct '08	Nov '08	Dec '08	Jan '09	Feb '09	Mar '09	Apr '09	May '09
1	MDA G CME Report	149 days	Tue 9/30/08	Fri 4/24/09									
2	Document submitted to NMED	1 day	Tue 9/30/08	Tue 9/30/08									
3	First NMED Review Cycle of CME Report	37 days	Wed 10/1/08	Thu 11/20/08									
4	NMED review period	34 days	Wed 10/1/08	Mon 11/17/08									
5	NOD received	1 day	Thu 11/20/08	Thu 11/20/08									
6	First NOD Response Cycle	111 days	Fri 11/21/08	Fri 4/24/09									
7	Initial evaluations of 2 new alternatives	110 days	Fri 11/21/08	Thu 4/23/09									
8	Provision of supplemental information (selection process)	45 days	Fri 11/21/08	Thu 1/22/09									
9	Revise Appendix G	30 days	Fri 11/21/08	Thu 1/1/09									
10	SVE NOD Cycle	32 days	Mon 1/5/09	Tue 2/17/09									
11	SVE NOD received	1 day	Mon 1/5/09	Mon 1/5/09									
12	SVE NOD response period	30 days	Tue 1/6/09	Mon 2/16/09									
13	SVE NOD response submitted	1 day	Tue 2/17/09	Tue 2/17/09									
14	Include SVE NOD Response information into CME Report draft	30 days	Wed 2/18/09	Tue 3/31/09									
15	Submit CME Report	1 day	Fri 4/24/09	Fri 4/24/09									

Note: Durations in working days
Project: mda g cme rpt sched
Date: Fri 12/19/08

Task



Milestone



External Tasks



Split



Summary



External Milestone



Progress



Project Summary

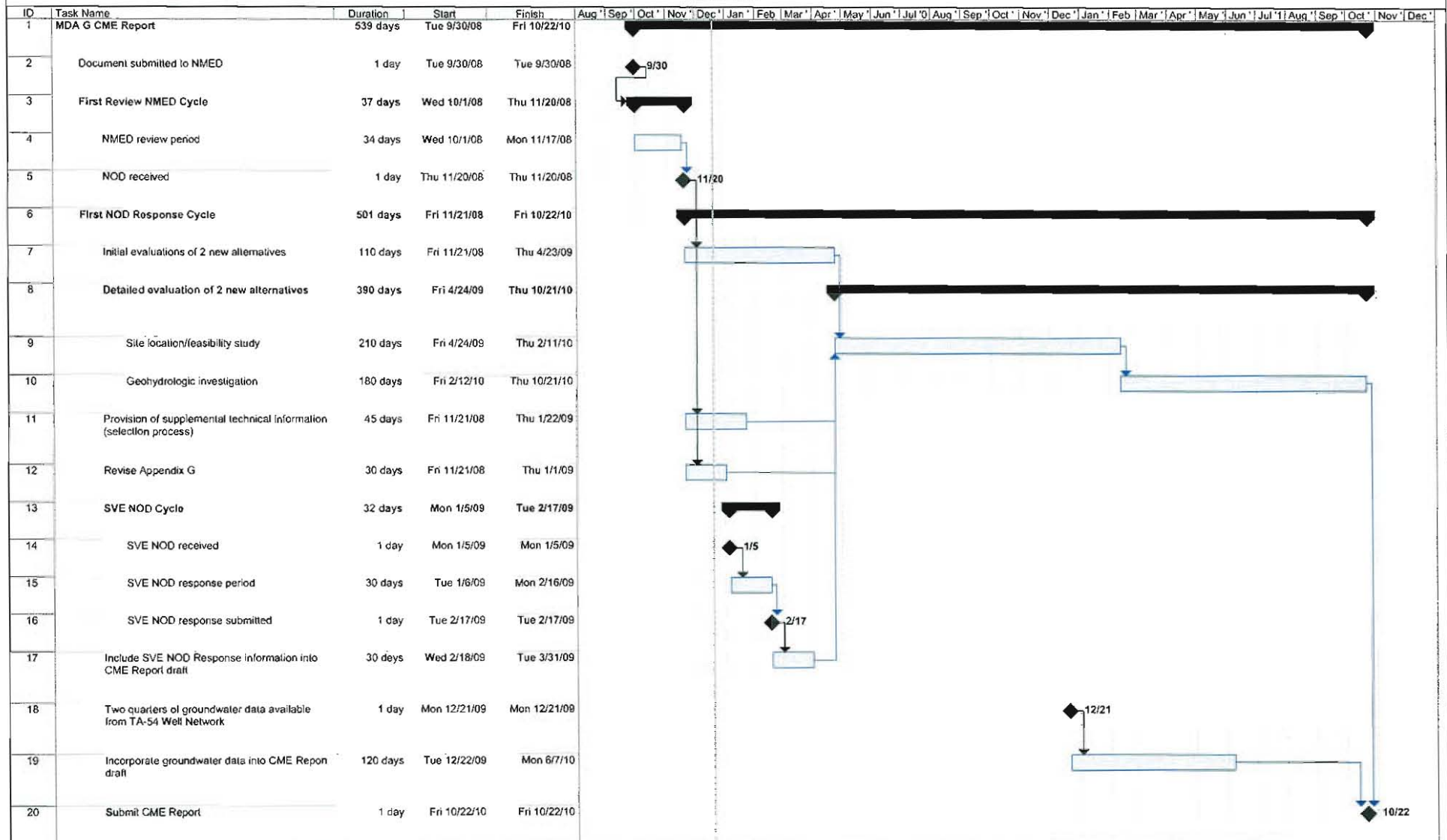


Deadline



Attachment B-2

MDA G CME Report Schedule
Attachment B-2



Note: Durations in working days
Project: mda g cme rpt.sched
Date: Fri 12/19/08

Task
Split

Progress
Milestone

Summary
Project Summary

External Tasks
External Milestone

Deadline