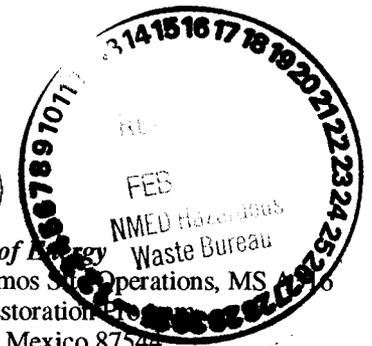


**ENVIRONMENTAL
RESTORATION
PROJECT**

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TA-54

Date: February 14, 2002
Refer to: ER2002-0119

Mr. John Young, Corrective Action Project Leader
Permits Management Program
NMED – Hazardous Waste Bureau
2905 Rodeo Park Drive East
Building 1
Santa Fe, NM 87505-6303

**SUBJECT: SUBMITTAL OF INITIAL CORRECTIVE MEASURES STUDY (CMS)
PROGRESS REPORT FOR MATERIAL DISPOSAL AREA (MDA) H,
POTENTIAL RELEASE SITE (PRS) 54-004 AT TECHNICAL AREA (TA)
54, APRIL THROUGH DECEMBER 2001**

Dear Mr. Young:

Enclosed please find three copies of the first "Progress Report for the Corrective Measures Study for Material Disposal Area H, Potential Release Site 54-004, at Technical Area 54, April through December 2001." This progress report is submitted in accordance with the reporting conditions outlined in Section R, *Scope of Work for a Resource Conservation and Recovery Act Corrective Measure Study at the Laboratory, Task IX, Reports, Part A, Progress* of Module VIII of the Laboratory's Hazardous Waste Facility Permit. The CMS Plan for MDA H (LA-UR-01-1629) was approved in your letter dated December 7, 2001, (HWB-LANL-01-002).

Please contact John Hopkins at (505) 667-9551 or Woody Woodworth at (505) 667-5820, if you have any questions.

Sincerely,

Julie A. Canepa, Program Manager
Environmental Restoration Project
Los Alamos National Laboratory

Sincerely,

Mat Johansen, Project Manager
Department of Energy
Office of Los Alamos Site Operations



Mr. John Young
ER2002-0119

-2-

February 14, 2002

JC/MJ/PB/vn

Enclosure: MDA H CMS Progress Report, April through December 2001

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**ENVIRONMENTAL
RESTORATION**
PROJECT

A Department of Energy
Environmental Cleanup Program

LA-UR-02-0328
February 2002
ER2002-0050

**Progress Report for Corrective
Measures Study for Material
Disposal Area H, Potential Release
Site 54-004, at Technical Area 54
April through December 2001**


Los Alamos
NATIONAL LABORATORY

Los Alamos NM 87545

Prepared by the Material Disposal Areas Focus Area

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1.0 INTRODUCTION

This first progress report summarizes Los Alamos National Laboratory (the Laboratory) activities completed during the months of April through December of 2001 on the corrective measures study (CMS) for Potential Release Site 54-004, Material Disposal Area (MDA) H. The CMS plan was submitted by the Laboratory during March 2001, and the CMS was started at risk. The New Mexico Environment Department (NMED) subsequently approved the CMS plan during December 2001. The activities described in the MDA H CMS plan (Environmental Restoration Project 2001, 70319) and other related activities are summarized below.

2.0 DESCRIPTION OF ACTIVITIES AND CONTACTS

High-Performing Team Proceedings and Decisions

The MDA High-Performing Team (HPT) met regularly during 2001; meetings occurred on January 10, February 7, March 14, April 25, October 15, and November 27. Meeting minutes were prepared for each meeting and are included in Attachment 1.

Resource Conservation and Recovery Act Facility Investigation Report

The Resource Conservation and Recovery Act (RCRA) facility investigation (RFI) report for MDA H was submitted to NMED Hazardous Waste Bureau (HWB) on May 31, 2001. NMED subsequently issued a request for supplemental information (RSI) on October 10, 2001. The Laboratory's response to the RSI was submitted to NMED HWB on December 22, 2001.

As reported in the MDA H RFI report (Environmental Restoration Project 2001, 70158), known environmental contamination at MDA H includes

- vapor-phase releases of tritium and volatile organic compounds (VOCs) from subsurface shafts and
- methoxychlor and tritium in channel sediments.

However, data gaps remained regarding the extent of tritium and VOC contamination in the subsurface and tritium in air. The RFI report identified the following activities to fill gaps in the data:

- collecting additional subsurface samples to further define the lateral extent of tritium and inorganic chemical contamination from borehole 54-1023 and from two newly drilled boreholes,
- installing an air-monitoring station adjacent to MDA H to monitor for tritium in air,
- collecting a sediment sample near location 54-5132 at the interface of the alluvial sediments and bedrock where sediment has accumulated over the years, and
- evaluating and incorporating groundwater data from the unsaturated zone monitoring at MDA G, the regional saturated zone at R-22, and the ongoing Technical Area (TA) 54 groundwater investigation.

The groundwater investigation data discussed in the last bullet will not be included with the upcoming addendum to the RFI report because quarterly sampling is ongoing and review of the data is being deferred to the ongoing TA-54-wide groundwater investigation. The groundwater investigation will be reported in the CMS report that is now being prepared.

The RFI report and RFI addendum evaluate current-day risk to human and ecological receptors. The CMS report will evaluate future risk to human and ecological receptors.

Conceptual Model of MDA H

As reported in the MDA H RFI report (Environmental Restoration Project 2001, 70158), the conceptual model of potential contaminant release from belowground sources includes the following processes:

- dissolution of soluble contaminants in water percolating through the disposal shafts,
- excavation of particulate contaminants by animals burrowing into the disposal shafts,
- uptake of bioavailable contaminants by plants rooting into the disposal shafts, and
- diffusion of volatile or vapor-phase contaminants.

Of these processes, only the diffusion of tritium (as water vapor) and VOCs is indicated by the RFI data. Release rates of tritium depend upon the rate at which gaseous species are generated and how quickly the contaminants move through the waste matrix, backfill, and rock matrix. The maximum tritium inventory has been reduced by both diffusion and radioactive decay. The remaining inventory of tritium will be reduced by a factor of 2 every 12 years and will continue to diffuse at slower rates.

Conceptually, the pathways by which contaminants released from MDA H could be transported in environmental media include the following:

- unsaturated transport by pore water through the vadose zone beneath the shafts;
- solute or sediment transport by surface water of surface contamination into Pajarito Canyon;
- biotic uptake and redistribution of contamination;
- diffusion of volatile or vapor-phase contaminants from the ground surface into the ambient air, followed by dispersion in air; and
- atmospheric transport of vapor-phase volatile contaminants and contaminated surface soils to off-site locations.

Tritium is being released from MDA H as water vapor, which moves readily through various environmental media, including air, water, and plants. Tritiated water vapor will disperse most readily into air. Tritium in water vapor may enter the food chain through root uptake, inhalation, dermal contact, and ingestion. If there is a high-enough release rate of the tritium vapor and sufficient surface water, the tritium vapor that migrates to the surface may condense into the liquid phase. This condensed vapor could flow into Pajarito Canyon following the natural drainage off the mesa. This process, however, is not physically possible at the generally low ambient moisture contents measured at MDA H. The thickness of the unsaturated rock between the disposal shafts (i.e., the tritium source) and the regional water-supply aquifer is 900 ft. Based on the existing measured moisture content (5%), the model assumes that water within the unsaturated rock is not expected to recharge into the regional aquifer for thousands of years, if at all. Based on the moisture-monitoring data and modeling results, the moisture content in the rock beneath MDA H would have to increase by at least 10 times to significantly increase groundwater flow velocities toward the regional aquifer. NMED has not yet concurred with the Laboratory's proposed site conceptual model, including assumptions about site geology and hydrogeology (Section 4.0).

An RFI report addendum will be prepared and submitted during April 2002 to evaluate the additional data collected during fiscal years 2001 and 2002 to fill data gaps identified in the RFI report. The additional RFI work completed during 2001 includes

- installing two new boreholes (54-15461 and 54-15462) drilled to depths of 100 ft and 300 ft (tritium and VOC samples were collected from various depths in these boreholes),
- collecting a drainage channel sediment sample, and
- biweekly tritium air sampling over a one-year period.

Information to be included in the RFI addendum includes

- analytical results from the samples collected during fiscal years 2001 and 2002;
- reevaluation of the conceptual model for MDA H, based on the new data;
- ages and fluxes for vadose zone waters at MDA H (boreholes 54-1023 and 54-15462);
- MDA J fracture characterization; and
- evaluation of high explosives in protected core at a 60-ft depth in borehole 54-1023.

CMS Plan

In a letter dated December 27, 2000, which addressed the status of the RFI report for MDAs G, H, and L, NMED requested that a CMS plan for MDA H be submitted within 90 days (HWB-LANL-00-005). The CMS plan for MDA H was subsequently submitted to NMED during March 2001 and was approved by NMED on December 7, 2001.

CMS Report and Screening and Evaluation of Corrective Measure Alternatives

A draft CMS report, including the screening and evaluation of technologies and corrective measure alternatives, was completed during November 2001 and has undergone a preliminary Laboratory peer review. The screening of technologies is based on a federal document on remediation technologies (Federal Remediation Technologies Roundtable 1997, 71332). The corrective measures alternatives being evaluated as part of the MDA H CMS include

1. upgrading the existing cover,
2. constructing an engineered cover,
3. stabilizing shafts and installing an engineered cover, and
4. excavating the material disposed of in the shafts and disposing of the waste off site at an appropriate waste site.

A conceptual design is being performed for each of the alternatives. Cover designs are based on NMED guidance on alternative landfill covers (NMED 1998, 71299), cover design work done at the Laboratory (Nyhan et al. 1998, 71345) and at Sandia National Laboratory (Dwyer 200, 71298), and a guidance document for evapotranspirative covers being used by EPA Region IX (Dwyer 2002, 71347). Construction Technology Laboratory and Techcon (funded by the US Department of Energy [DOE]) are evaluating stabilization alternatives. Omicron is performing worker and transportation risk assessments for excavation (Restrepo 2001, 70229) (alternative 4). EPA guidance is being used to prepare cost estimates for each of the alternatives (EPA 2000, 71540).

Numerical models are being used to evaluate future risk for alternative 1. The models evaluate vapor-phase transport, infiltration of water through the cover to groundwater, bioturbation, surface-water transport and erosion, and air-borne transport. The remaining containment alternatives that leave waste in place (alternatives 2 and 3) include features that are meant to improve the performance of alternative 1. Therefore, if modeling shows that alternative 1 meets all long-term human health criteria and objectives, then alternatives 2 and 3 would also meet all long-term human health criteria and objectives and would not be modeled. A worker and transportation risk assessment is being conducted for alternative 4.

Preliminary Laboratory internal peer reviews of the draft CMS report were conducted on November 28 and December 5, 2001.

Public and Stakeholder Involvement

A public involvement plan was developed and implemented during FY 2001 as part of the CMS process. The MDA H public involvement plan was included as an attachment to the MDA H CMS plan. Public outreach activities completed during the reporting period include the following:

- February 8, 2001. John Hopkins presented an overview of the 10 mesa-top MDAs, including MDA H, and the RCRA corrective action process to San Ildefonso, Santa Clara, Jemez, and Cochiti pueblos.
- February 12, 2001. John Hopkins, Woody Woodworth, and Eliza Frank presented an overview of MDA H and the RCRA corrective action process to the Northern New Mexico Citizens Advisory Board (NNMCAB) environmental restoration (ER) subcommittee (subsequent briefings occurred during March, April, and May 2001).
- March 1, 2001. John Hopkins presented an overview of MDA H and the RCRA corrective action process to San Ildefonso Pueblo.
- June 13, 2001. The Laboratory and DOE sent a mailer to 1200 individuals and public interest organizations on Laboratory's mailing list. The mailer introduced the ER Project, the RCRA corrective action process, the history of MDA H, and potential corrective measure alternatives for MDA H.
- June 27, 2001. DOE and the Laboratory held a workshop for stakeholders and discussed the potential corrective action alternatives for MDA H. The workshop was cosponsored by the NNMCAB and was held at the DOE Los Alamos Area Office.
- August 2001. The ER Project provided a written response to comments received on the MDA H RFI report from the NNMCAB ER subcommittee.
- August 14, September 25, and November 13, 2001. The MDA H Focus Group meetings were convened to enlist a broad spectrum of individuals and public interest organizations in reviewing the MDA H site background and proposed corrective action alternatives for MDA H. The focus group also decided to have the CMS report, including the alternatives assessment, independently reviewed and began collecting resumes of potential qualified reviewers.

The focus group contact is Bruce Poster at 989-8500. The main contact for the NNMCAB is Menice Manzanares at 1-800-218-5942. Participating and active members of the focus group include

- Coila Ash, New Mexico Toxics Coalition
- Daniel Moya, Pojoaque Pueblo
- Diane Albert, Los Alamos County Council
- Dorothy Hoard, NNMCAB
- Fran Berting, Los Alamos County Council and NNMCAB
- John Tauxe, Neptune & Company
- Joni Arends, Concerned Citizens for Nuclear Safety (CCNS)
- Kevin Holsapple, Los Alamos Community Development Corporation
- Neil Weber, San Ildefonso Pueblo
- Zane Spiegel, Hydrologist
- Adele Hopkins, Los Alamos League of Women Voters
- Ernesto Rodriguez, State Emergency Management Bureau

The following parties have been invited to the focus group meetings but have not yet attended meetings:

- Dolores Garcia, Office of Senator Bingaman
- Greg Mello, Los Alamos Study Group
- Jay Pecos, Cochiti Pueblo

Contacts

Contacts are as follows:

- *Laboratory ER Project.* Primary contact is John Hopkins at 667-9551; secondary contact is Paula Bertino at 665-2198.
- *DOE.* Primary contact is Woody Woodworth at 665-5820.
- *NMED.* Primary contact is Eliza Frank at 428-2539; the secondary contact is Neelam Dhawan at 428-2540.
- *Laboratory ER Project Communication and Outreach.* Contacts include Carmen Rodriguez at 665-6770 and Saundra Martinez at 665-6771.

3.0 PERCENTAGE OF CMS COMPLETED

Approximately 80% of the CMS for MDA H has been completed. This assumes that between 3% and 5% will be required for revisions following the public comment period.

4.0 PROBLEMS ENCOUNTERED/ACTIONS TAKEN TO RECTIFY PROBLEMS

Problem 1. NMED has not yet concurred with the Laboratory's proposed site conceptual model, including assumptions about site geology and hydrogeology.

Problem 2. The target levels (for modeling) have not yet been identified and agreed upon.

Problem 3. DOE and EPA base the assessment of risk from radionuclides on dose; NMED bases the assessment of risk from all hazardous constituents in excess of an incremental cancer risk of 10^{-5} .

Problem 4. CCNS and other focus group members have requested that an independent review of the MDA H CMS be conducted.

Actions to Rectify Problems 1, 2, and 3. The MDA HPT will initiate a series of meetings with modeling and regulatory compliance personnel to review the basis for the models, assumptions about site geology and hydrology, and regulatory issues.

Action to Rectify Problem 4. Focus group members will be provided with the resumes (obtained from the Laboratory, DOE, NMED, and CCNS) of up to 10 individuals to review the MDA H CMS report before a February 2002 focus group session; group members will be requested to select one reviewer each.

5.0 KEY PERSONNEL CHANGES

The following key Laboratory personnel are involved in the MDA H CMS.

- Modeling—Diana Hollis, Kay Birdsell, Brent Newman, Phil Stauffer, and Ralph Perona
- Risk Assessment—Rich Mirenda and Ralph Perona
- Alternatives Assessment—John Hopkins
- Regulatory Compliance—Paul Schumann and Paula Bertino
- Worker and Transportation Risk—Omicron
- Stabilization—John Kubar, Techcon
- MDA H Waste Inventory Review—Brian Myers
- Cost Estimating—Marc Zoher
- Public Involvement—Saundra Martinez and Carmen Rodriguez

6.0 PROJECTED WORK FOR JANUARY 2002

HPT Proceedings and Decisions

There are no HPT meetings scheduled for January 2002.

RFI Report and RFI Addendum

NMED HWB will review the RSI response to the RFI report, and the Laboratory will continue to prepare the MDA H RFI addendum and CMS report.

Screening and Evaluation of Corrective Measure Alternatives

MDA H technical team members will meet with peer reviewers to resolve comments on the draft CMS report. Comments will be incorporated into a second peer review draft CMS report, which will be reviewed by the peer reviewers to ensure that comments were incorporated. Technical editing of the CMS report will begin in earnest during late February.

Public and Stakeholder Involvement

None planned during January 2002.

Ongoing Work

Draft sections of the RFI addendum will be prepared as analytical data from the additional sample collection are available. A second review draft of the MDA H CMS report will be prepared and issued for internal Laboratory/DOE peer review. Meetings will be held with NMED during February 2002 to discuss and attempt to resolve problems 1, 2, and 3 described above.

References

Dwyer, S., 2002. "Alternative Earthen Final Cover Design Guidance." (Dwyer 2002, 71347)

Dwyer, S., January 2001. "Finding a Better Cover," in Civil Engineering, Vol. 71, No. 1, pp. 58-63, Reston, Virginia. (Dwyer 2001, 71298)

Environmental Restoration Project, March 2001. "Corrective Measures Study Plan for Material Disposal Area H at Technical Area 54," Los Alamos National Laboratory report LA-UR-01-1629, Los Alamos, New Mexico. (Environmental Restoration Project 2001, 70319)

Environmental Restoration Project, May 2001. "RFI Report for Material Disposal Area H at Technical Area 54," Los Alamos National Laboratory report LA-UR-01-1208, Los Alamos, New Mexico. (Environmental Restoration Project 2001, 70158)

EPA (US Environmental Protection Agency), July 2000. "A Guide to Developing and Documenting Cost Estimates During the Feasibility Study," Environmental Protection Agency EPA 540-R-00-002, OSWER 9355.0-75, Washington. D.C. (EPA 2000, 71540)

Federal Remediation Technologies Roundtable, October 1997. "Remediation Technologies Screening Matrix and Reference Guide," US Army Environmental Center report SFIM-ABC-ET-CR-97053, Aberdeen Proving Ground, Maryland. (Federal Remediation Technologies Roundtable 1997, 71332)

NMED (New Mexico Environment Department), April 1, 1998. "Guidance Document for Performance Demonstration for an Alternate Cover Design under Section 502.A.2 of the New Mexico Solid Waste Management Regulations (20 NMAC 9.1) Using HELP Modeling and Performance Demonstration for an Alternate Liner Design under Section 306.A.2 of the New Mexico Solid Waste Management Regulations (2- NMAC 9.1) Using HELP Modeling," New Mexico Environment Department Solid Waste Bureau permit Section report, Santa Fe, New Mexico. (NMED 1998, 71299)

Nyhan, J., J. Salazar, D. Breshears, and F. Barnes, 1998. "A Water Balance Study of Four Landfill Cover Designs at Material Disposal Area B," Los Alamos National Laboratory report LA-13457, Los Alamos, New Mexico. (Nyhan et al. 1998, 71345)

Restrepo, L., September 30, 2001. "Transportation and Worker Risk Assessment for Material Disposal Area (MDA) H, TA-54 at Los Alamos National Laboratory for the Excavation Alternative," Omicron Safety and Risk Technologies report 01-OMICRON-014, Albuquerque, New Mexico. (Restrepo 2001, 70229)

Attachment 1

*MDA High-Performing Team Meeting Minutes
April through December 2001*

MDA H CMS High-Performing Team

Meeting Notes

Meeting Date: January 10, 2001

Meeting Time: 8:30 am – 12:30 pm

Meeting Location: NMED-HWB Conference Room, Santa Fe, New Mexico

Attendees: Tara Athan (Technical Support, LANL/UC)
Paula Bertino (LANL-ER)
Mark Coffman (NMED-DOE OB)
Neelam Dhawan (NMED-HWB)
Eliza Frank (NMED-HWB)
Diana Hollis (LANL-ER)
John Hopkins (LANL-ER)
Paul Schumann (Programmatic Support, LANL-ER)

Scribe: Paula Bertino

Agenda

- Review and revise facilitator summary from 11/21-11/22/00 workshop
- Discuss proposed Corrective Action Objectives for MDA H
- Discuss draft CMS Plan outline for MDA H
- Discuss components of the Public Involvement Plan and schedule
- Discuss range of remedial alternatives for MDA H
- Begin to identify CMS decisions to be addressed in CMS Report
- Discuss presentation to the ER Subcommittee of the CAB scheduled for February 12, 2001 and the background information the Subcommittee should review prior to the presentation
- Establish next HPT meeting date, time and agenda

Outcome of Agenda Item Discussions

Two main comments voiced with regard to the facilitator summary from 11/21-11/22/00 workshop:

- The goal of the MDA HPT is the CMS for MDA H, and not the plug-in approach nor a generic MDA Implementation Plan. LANL is undertaking a parallel effort to develop a plug-in implementation approach for MDAs.

- Corrective Action Objectives for MDA H do not include ensuring the highest beneficial use of groundwater or surface water by ensuring that contaminants will not be present at levels that exceed groundwater protection standards or surface water quality criteria, respectively.

Corrective Action Objectives for MDA H:

The draft Corrective Action Objectives (CAOs) for MDA H and their intent were briefly discussed by the team. It was generally agreed that the CAOs are intended to be vision-level goals that the HPT will target when choosing the remedy for MDA H, and the team agreed to call these goals Target Corrective Action Objectives (TCAOs). The team also agreed to modify the language of the first TCAO, which now reads as follows:

- *Protect Human Health*

For RCRA hazardous waste constituents, the selected remedy will provide reasonable assurance that the excess incremental cancer risk estimated according to EPA's Reasonable Maximum Exposure (RME) approach does not exceed a range of 10^{-6} to 10^{-4} for the design life of the selected remedy; and that the non-cancer risk does not exceed a hazard index of 1.

Specific concerns were raised by Eliza and Neelam regarding the risk range of 10^{-6} to 10^{-4} presented in the human health protection objective. The team discussed that the purpose of a range of risk will provide HPT flexibility when evaluating alternative remedies even though NMED-HWB has established 10^{-5} as an allowable level of risk. Additionally, the remedy evaluation process will illustrate how different remedies will meet different risk levels for various exposure pathways. For example, a specific remedy may result in a risk level of 10^{-10} for one pathway and 10^{-4} for another pathway that when considered together are within the target range of the objective. The HPT tentatively agreed that the risk range of 10^{-6} to 10^{-4} is acceptable as a vision-level TCAO for MDA H.

NMED-HWM staff will determine the Bureau's position with regard to the 15 mrem/year total calculated RME dose proposed for the human health protection objective for radionuclides.

The team agreed to delete the specific reference to MDA H in the media standard objective.

Eliza and Neelam will review the draft TCAOs and request comments from other NMED-HWB staff in order to have concurrence of the TCAOs by February 6, 2001.

CMS Plan Outline:

All modifications to the outline agreed to by the HPT are included in the attached MDA H CMS Plan Outline (Rev.1). Team members agreed that the CMS Plan should be relatively concise and LANL committed to submitting a draft plan to NMED-HWB by the end of January. Wherever possible, generic language from previously published technical documents and regulatory guidance (i.e., descriptions of remedial alternatives) will be incorporated.

Eliza and Neelam indicated that some level of supplement information will be necessary to ensure nature and extent is adequately defined for MDA H. After much discussion, the team subsequently agreed these data gaps will be identified in the conclusions of the MDA H RFI report and the data will be collected and evaluated during the CMS process.

The team still needs to decide whether Sections 5.0 and 6.0 of the CMS Plan will be based on current permit language, Subpart S or some combination that may be reflected in the new permit. Eliza and

Neelam agreed to discuss this issue with other NMED-HWB staff and provide comments to the team during the next few weeks.

LANL is in the process of interviewing former managers responsible for waste disposal at MDA H to develop specific waste type, quantity and depth profiles for each of the nine shafts. This information may be useful for the evaluation of remedial alternatives and should be available to the team prior to the next meeting.

The team agreed that long-term stewardship will be an integral part of the remedy evaluation process and an integral part the remedy ultimately selected for MDA H. Paul Schumann forwarded a list of DOE documents and reports discussing long-term stewardship to all team members on January 11, 2001.

Public Involvement Plan:

The team agreed to use the Interagency Flood Risk Assessment Team (IF-RAT) Communications Plan as the basis for the development of the Public Involvement Plan for the CMS at MDA H. The IF-RAT Communications Plan was e-mailed to team members on January 11, 2001 for review and comment and will be discussed at the next HPT meeting. The team discussed additional public involvement activities to be evaluated and incorporated into the Public Involvement Plan including:

- Open Houses/Working Sessions
- Focus Groups
- Web Site
- Tours
- How stakeholder questions and information inquiries will be addressed

Range of Remedial Alternatives:

The team had no additions to the list of remedial alternatives included in the CMS Outline (derived from the November 2000 facilitated session). The generic descriptions of each alternative in the CMS Plan will include specific technical options associated with each remedy.

Identification of CMS Decisions to be Addressed in CMS Report:

The team began identifying and discussing the major decisions that will have to be made during the CMS process at MDA H. Two of the key decisions, TCAOs and Range of remedial alternatives have already been addressed by the team. Other key decisions raised during the meeting include: Point of Compliance; Nature and Extent; Scope of the CMS; Specific Standards; Scenarios of Concern; Factors such as reliability of the remedy; Relative Risk versus???. Qualification and/or Quantification of Uncertainty; Ecological Risk; how to address the Permit Modification required for Shaft 9; and the Basis for Remedy Selection. Team members are to review this list and identify other key decisions for the next meeting or even prior to the next meeting. Many of the key decisions will then be hammered out by HPT technical working groups and brought back to the HPT for concurrence.

The issue of nature and extent of contamination will be addressed by the team in the conclusions of the MDA H RFI Report and through supplemental data collection during the CMS. Eliza and Neelam are discussing how to approach the shaft 9 regulatory status issue with NMED-HWB permitting staff.

CAB Presentation and Background Information:

Eliza and Paula briefly reported on the CAB ER Subcommittee meeting they attended on 1/9/0. MDAs were on the agenda and attendees were briefed on the MDA HPT and its revised scope and objectives. As result, the CAB ER Subcommittee requested that the MDA HPT give an initial presentation about the RFI/CMS process at MDA H at their next meeting on February 12, 2001, at 6:00 pm in Espanola.

The team will send at least two members to the CAB ER Subcommittee on February 12th to present information on the status of the HPT, list of remedial alternatives, Public Involvement Plan, and to discuss which CMS decisions the HPT would like to receive input on from the subcommittee. The subcommittee requested that we provide background material prior to the February 12th meeting, and the team agreed to send background information on MDA H from the RFI Report and HPT schedule from the December 12, 2000 meeting minutes. The subcommittee was also previously provided with draft fact sheets on many of the MDAs at LANL (from the August 1999 draft MDA Core document). These fact sheets were e-mailed to Eliza on January 11, 2001.

Facilitated Meetings:

The team decided that outside facilitators are appropriate and necessary for HPT meetings when the team has reached an impasse on one or more major issues. When one or more team members believe that a facilitated session is warranted, they will notify all HPT team members for concurrence on the need for facilitation, the meeting agenda and scheduling of the meeting.

At the end of the meeting, the team agreed that a facilitated session was needed to hammer out the scope of the CMS at MDA H. However, following the meeting, Eliza and Neelam were able to clarify the CMS scope issue regarding groundwater through discussions with other NMED-HWB staff, and requested that the facilitated session be postponed until the team again agrees that a facilitated session is necessary to proceed. Eliza and Neelam are in the process of providing LANL comments on the MDA H RFI Report and will also provide information to the team regarding CMS requirements in the permit vs. RCRA Subpart S, and requested that the team communicate via e-mail correspondence on issues associated with the key decisions for the CMS until the next meeting can be scheduled.

Next Meeting Agenda (as of 1/11/01):

Review and discuss CMS Plan

Review and discuss Public Involvement Plan

Conduct "Dry Run" of Presentation for CAB ER Subcommittee meeting

Discuss List and Status of Key Decisions for CMS

Next Meeting Time and Place: To be determined, (based on Neelam's 1/11/01 e-mail)

Next Meeting Scribe: To be determined

MDA H CMS PLAN OUTLINE

EXECUTIVE SUMMARY

1.0 INTRODUCTION

1.1 STATEMENT OF PROBLEM

1.2 PURPOSE AND REGULATORY CONTEXT

1.3 GENERAL APPROACH (include uncertainty management)

1.4 PUBLIC INVOLVEMENT PLAN

2.0 CURRENT SITE CONDITIONS (take directly from RFI)

2.1 PRS DESCRIPTION

2.2 FACILITY HISTORY AND BACKGROUND

2.3 COPC IDENTIFICATION

2.4 EXTENT OF CONTAMINATION

2.5 CURRENT DAY RISK

2.6 PROXIMATE PRSs

2.7 DATA GAPS (from RFI Conclusions)

3.0 CORRECTIVE MEASURES OBJECTIVES AND SCOPE

3.1 CORRECTIVE ACTION OBJECTIVES

3.2 INSTITUTIONAL CONSIDERATIONS

3.2.1 LAND USE

3.2.2 MEDIA CLEANUP STANDARDS

3.2.3 POINTS OF COMPLIANCE

3.2.4 RISK-BASED DECISION APPROACH

3.2.5 APPLICABLE REGULATION AND REQUIREMENT EVALUATION

3.2.6 STEWARDSHIP

4.0 IDENTIFICATION AND SCREENING OF ALTERNATIVES

4.1 IDENTIFICATION AND DESCRIPTION OF ALTERNATIVES

4.1.1 Likely Corrective Actions (Generic Descriptions)

4.1.1.1 Monitoring Only

MDA H CMS PLAN OUTLINE (cont.)

4.1.1.2 Maintenance of existing cover and monitoring only

4.1.1.3 Increase existing controls (i.e., access restrictions, administrative requirements, monitoring, maintenance)

4.1.1.4 Venting of tritium vapors

4.1.1.5 Stabilization

4.1.1.6 Cover/Cap

4.1.1.7 Excavation and Disposal

4.2 INITIAL SCREENING OF ALTERNATIVES

5.0 PROCESS AND CRITERIA FOR EVALUATION OF REMEDIATION ALTERNATIVES

(Permit language vs Subpart S)

5.1 TECHNICAL

5.1.1 PERFORMANCE

5.1.2 RELIABILITY

5.1.3 IMPLEMENTABILITY

5.1.4 SAFETY

5.2 ENVIRONMENTAL

5.3 HUMAN HEALTH

5.4 INSTITUTIONAL

5.5 COST

6.0 PROCESS AND CRITERIA FOR JUSTIFICATION AND RECOMMENDATION OF THE CORRECTIVE MEASURE

6.1 TECHNICAL

6.2 HUMAN HEALTH

6.3 ENVIRONMENTAL

7.0 MONITORING PLAN APPROACH

8.0 REFERENCES

9.0 APPENCIX A ACRONYMS AND GLOSSARY

10.0 APPENDIX B SCHEDULE FOR CMS/CFI AT MDA H

- 11.0 APPENDIX C CMS REPORT OUTLINE**
- 12.0 APPENDIX E COST/BENEFIT AND RISK/BENEFIT CONSIDERATIONS THAT WILL BE APPLIED IN THE CMS REPORT**
- 13.0 APPENDIX F CROSSWALK BETWEEN HSWA PERMIT REQUIREMENTS AND THIS DOCUMENT**
- 14.0 PUBLIC INVOLVEMENT PLAN**

MDA H CMS High-Performing Team

Meeting Notes

Meeting Date: February 7, 2001

Meeting Time: 8:30 am – 11:00 am

Meeting Location: NMED-HWB Conference Room, Santa Fe, New Mexico

Attendees: Paula Bertino (LANL-ER)
Neelam Dhawan (NMED-HWB)
Eliza Frank (NMED-HWB)
Diana Hollis (LANL-ER)
John Hopkins (LANL-ER)
Woody Woodworth (DOE-AL)

Scribe: Paula Bertino

Agenda

- Determine the scope/context/endpoint for MDA H CMS
- Discuss presentation for CAB ER Subcommittee Meeting 2/12/01
 - Specifically, is the topic of the presentation an overview of the MDA Focus Area or the CMS of MDA H? See CAB agenda.
- Briefly discuss status of the draft Public Involvement Plan
- Discuss Status of Draft CMS Plan and Key Decisions for CMS
 - The HSWA Module of LANL's Hazardous Waste Facility Permit is based on and incorporates RCRA Subpart S.
- Briefly discuss NMED-HWB MDA H RFI Report Comments and LANL's pending response to the comments
 - Separate meeting to present LANL's response is scheduled for 8:30 am, February 14, 2001 at the NMED-HWB. This start time may be moved to 9:30 am.
 - Discuss when LANL will send the RFI Report to EPA for review.
- Discuss status of CMS schedule
- Establish agenda, date and time of next HPT meeting

Prior to beginning discussion of the agenda items, Eliza and Neelam indicated that they will work with NMED-HWB staff risk assessors to determine the Bureau's position with regard to the 15 mrem/year total calculated RME dose proposed for the human health protection objective for radionuclides.

Eliza and Neelam will obtain comments from other NMED-HWB staff on the draft Target Corrective Action Objectives (TCAOs) in order to have concurrence of the TCAOs before the next HPT meeting on March 14, 2001.

Lastly, Eliza and Neelam stated that they are still reviewing options for completing the permit modification required to move Shaft 9 to the HSWA Module of the Laboratory's Hazardous Waste Facility Permit.

Outcome of Agenda Item Discussions

Determine the scope/context/endpoint for MDA H:

Specific concerns were raised by Diana and Tara regarding the fact that the remedy at MDA H will not actually be final until: 1) the HWP/site-wide groundwater monitoring program is established, 2) MDA G and L are "closed," and 3) all PRSs in the Lower Pajarito aggregate are investigated and the cumulative watershed assessment is complete. The team discussed whether the corrective action to be implemented at MDA H should be considered a conditional remedy, an interim remedy, or a phased remedy. The team agreed that this decision does not have to be made at this time and is inherent in the CMS process. The team also agreed to keep this issue in mind during the preparation of the CMS Plan and Report.

The team determined that the implementation of a corrective measure at MDA H would not preclude the future consideration and/or implementation of a new technology or remedy at the site and that site monitoring and review cycles will be designed to address any problems associated with the degradation of the initial remedy. Additionally, the team agreed that there would be two evaluation periods for the corrective action, one at the end of the design life/phase of institutional control and one during the subsequent long-term stewardship phase.

Presentation to the CAB ER Subcommittee Meeting 2/12/01:

The team reviewed and agreed on overheads for the presentation to the CAB ER Subcommittee meeting on February 12th. The HPT will send at least three members (one each from DOE, NMED-HWB and LANL) to the meeting to present the following: an synopsis of the MDAs at LANL; an overview of the RCRA Corrective Action process; a description of the HPT and its mission; a description of MDA H; an overview of the RFI and CMS at MDA H; and the proposed CMS schedule including a discussion of specific HPT milestones we would like to receive input on from the subcommittee.

Diana volunteered to revise the draft overhead slides and distribute them to the team for review. John indicated that he would use the overhead slides for a presentation to the Pueblos on Thursday, February 8, 2001, and Woody stated that Ted Taylor would like to review the overhead slides on Thursday as well.

In addition, Diana designed a Venn diagram that depicts the relationship, and the roles and responsibilities of each member organization of the HPT, and will attempt to capture the image for use in future HPT presentations. The diagram was the result of team discussion and concern regarding the potential for a negative public perception of NMED-HWB's relationship with their DOE and LANL counterparts on the team.

Public Involvement Plan (PIP):

The team discussed the draft PIP. It was agreed that LANL and DOE really “own” the plan and NMED-HWB will determine their role during the public participation process and how and when they will participate. Specific comments were suggested by team members and will be incorporated into the draft plan by Paula and John. The revised PIP will be distributed with the final version of these meeting minutes. The team agreed to the following specific changes to the PIP:

- Not to use the words “clean up” or “restoration” when discussing the CMS at MDA H. Remedy, remedial action and/or corrective action more accurately portray the activities envisioned for the site.
- The schedule of public meetings would be tied to HPT milestones, (CAB Subcommittee and Full CAB meeting dates for FY01 are attached).
- Recent information gleaned by John and Diana regarding the waste inventory at MDA H from former employees familiar with the waste management practices at the site will be incorporated into the inventory table provided in the PIP.

Specific public involvement activities to be evaluated and incorporated into the Public Involvement Plan include:

- Open Houses/Working Sessions
- Focus Groups
- Web Site
- Tours
- How stakeholder questions and information inquiries will be addressed
- Most frequently asked questions list

Discuss Status of the Draft CMS Plan and Key Decisions for the CMS:

During the January 10, 2001 HPT meeting, the team discussed whether Sections 5.0 and 6.0 of the CMS Plan will be based on current permit language, Subpart S or some combination that may be reflected in the new permit. Eliza and Neelam agreed to discuss this issue with other NMED-HWB staff and provide comments to the team.

After reviewing and/or discussing the crosswalk between the HSWA Module of LANL’s Hazardous Waste Facility Permit and RCRA Subpart S (prepared by Tara) the team agreed that the HSWA Module is consistent with and incorporates RCRA Subpart S. The team agreed that the CMS Plan and Report would follow the HSWA Module. LANL indicated that the draft CMS Plan for MDA H would be submitted to NMED-HWB for formal review in early March 2001. The team agreed to meet and incorporate comments simultaneously with the goal of submitting the final RFI Report to NMED-HWB by the end of March. No other key decisions were discussed.

Discuss NMED-HWB MDA H RFI Report Comments and LANL's pending response to the comments

- An HPT working meeting to present and discuss LANL's response to NMED's comments on the MDA H RFI Report is scheduled for **9:30 am, February 14, 2001** at the NMED-HWB. LANL will send Eliza and Neelam a draft response prior to the meeting. The report will be considered a "working draft" until the team completes the Data Gap section and Conclusions of the document.
- The team agreed that LANL will send the "working draft" version of the MDA H RFI Report to EPA for review after Eliza and Neelam indicated that they had no comments on the revised RFI Report outline.

Discuss status of CMS schedule:

The team made no changes to the schedule agreed to during the December 12, 2000 HPT meeting. This schedule is attached along with the CAB schedule for FY01. Several of the dates listed for the RFI report have slipped, but the overall schedule is on target.

Next Meeting Agenda (as of 2/08/01):

Complete "Data Gaps and Conclusions" Section of RFI Report

Finalize CMS Plan and Technical Objectives

Finalize Public Involvement Plan

Discuss Status of HAD H Web Page

Discuss 2/12/01 CAB ER Subcommittee Meeting and Future Presentations

Next Meeting Time and Place: Wednesday March 14, 2001, 8:30 am

NMED-HWB Conference Room, Santa Fe, New Mexico

Next Meeting Scribe: To be determined

CAB ER Subcommittee

Full CAB FY01 Meeting Schedule

FY01 Meeting Schedule

2/12/01	3/28/01
3/12/01	4/25/01
4/9/01	5/30/01
5/14/01	6/27/01
6/11/01	7/25/01
7/9/01	8/29/01
8/13/01	9/26/01
9/10/01	10/24/01

Schedule for Completing MDA H RFI/CMS

MDA H RFI

12/27/00	Letter from HWB to LANL that the reporting of the RFI for MDA H will be separate and notification that a CMS is requires for MDA H – completed
01/05/01	Receive NMED-HWB RFI comments and comment resolution meeting – completed 1/12/01
01/31/01	MDA H Report to Cheryl Overstreet (EPA) for risk assessment review – Anticipated new date 2/22/01
02/14/01	Team to begin drafting “data gaps and conclusions” for MDA H RFI report – complete during 3/14/01 HPT meeting
03/30/01	MDA RFI Report complete
04/15/01	RFI Report invoiced and formally approved by NMED-HWB

MDA H CMS Milestones

01/15/01	Alternative remedies for MDA H identified
01/31/01	Draft Public Involvement Plan complete
02/06/01	Detailed target corrective action objectives identified
03/01/01	Public outreach initiated with CAB, Pueblos, and availability sessions – initiated – CAB – 1/18/01 and 2/12/01, Pueblos – 2/8/01, more to come
3/14/01	Detailed target corrective action objectives agree to within HPT
03/23/01	CMS Plan complete

06/__/01 Alternatives assessment for MDA H remedies completed and documented

08/__/01 Preferred remedy selection

11/__/01 Technical peer review of MDA H CMS Report initiated

01/__/02 Technical peer review of MDA H CMS Report completed

04/__/02 Core team and legal review of MDA H CMS Report initiated

07/01/02 Public Comment notices issued

08/01/02 Public comment period initiated

10/01/02 Public comment period completed

12/20/02 Public comments incorporated into final MDA H CMS Report

MDA H CMS High-Performing Team

Meeting Notes

Meeting Date: March 14, 2001

Meeting Time: 8:30 am – 10:00 am

Meeting Location: NMED-OB Conference Room, Santa Fe, New Mexico

Attendees: Paula Bertino (LANL-ER)
Neelam Dhawan (NMED-HWB)
Eliza Frank (NMED-HWB)
John Hopkins (LANL-ER)
Woody Woodworth (DOE-AL)

Scribe: Paula Bertino

Agenda

- Review/discuss CAB input on PIP received during the March 10th CAB ER Subcommittee meeting and finalize PIP
 - Alternatives Workshop for Stakeholders
- Discuss MDAS H RFI Report schedule
 - LANL peer review completed 3/15/01
 - Review and discuss Recommendation and Conclusions section including data gaps
 - Submit draft report to Cheryl Overstreet
 - Schedule submittal to NMED and schedule for public distribution
- Discuss CMS Plan Schedule
 - Submittal to NMED by 3/30/01
 - Complete Identification of Alternatives – technical memorandum to be submitted documenting approach to combine the 8 alternatives identified by the team in December 2000 into 3 or 4 alternatives and proceed directly into the detailed analysis of these alternatives
- Preliminary Engineering Issues
 - No Action (decision threshold)
 - Containment Alternatives

- Excavation alternatives brainstorming session scheduled for April 9 and 10
- Discuss Alternatives Workshop for Stakeholders – June 2001
- Elicitation on Inventory Uncertainties and Input Parameters – April 2001?
- Discuss status of overall CMS schedule
- Establish agenda, date and time of next HPT meeting

Outcome of Agenda Item Discussions

Review/discuss CAB input on PIP received during the March 10th CAB ER Subcommittee meeting and finalize PIP:

John, Woody, and Eliza attended the March 12th CAB ER Subcommittee and reported that with regards to the PIP, there was a lot of discussion regarding the planned remedial alternatives workshop. This workshop is tentatively scheduled for June 2001 and will be open to the public and all stakeholders to address every alternative remedy being considered during the CMS of MDA H. The Team discussed the details of the workshop including that it be a full day perhaps in the large conference room at LAO. One approach being considered is to set up a separate table for each alternative, i.e., one for excavation alternatives and evaluation results, one for cover alternatives and evaluation results, etc., and one for the RFI results including risk assessment and inventory results possibly manned by Rich Miranda. A host and co-host for the workshop will need to be identified. The workshop will be discussed further at the next HPT meeting.

Additional issues raised at the subcommittee meeting included how to improve the attendance of public meetings. The new CAB members had been on a tour of TA 54 the weekend before and the ER Subcommittee members felt like they could wait to see MDA H when they have specific items they wish to see.

In the meantime, John and NMED will attend the next CAB ER Subcommittee meeting on April 9th to further discuss the workshop, potential site tour dates, and to obtain additional comments on the PIP.

John also suggested that the Team tour and meet with the individuals (including NMED staff) involved with the chemical waste and mixed waste landfills and alternative landfill cover demonstration project at Sandia in the near future.

The team also agreed not to distribute MDA H information sheets (being prepared in accordance with PIP) until the date of the June alternatives workshop is firmly established so they mail them out together.

Discuss MDA H RFI Report Schedule:

The LANL peer review of the MDA H RFI Report was completed on 3/15/01. The Team edited the Recommendations and Conclusions section of the report including identification of data gaps and an approach to address them as part of the CMS. The revised section is attached to these minutes. Specific discussion on activities being undertaken to address the data gaps included:

- a decision to revise the groundwater statement (see attached section),
- confirmation by LANL that ESH-17 will install a solar powered air monitoring station just outside the fence at MDA H that will sample biweekly for a year (although data may only be available for 11 months due to cloud cover),

- the sediment sample location will be located during an upcoming site visit with Steve Veenis,
- information on fracture density and from the four RFI boreholes at MDA J will be used to supplement data gaps for MDA H, and
- LANL will submit activity reports to Eliza for borehole 54-1023. Data from the boreholes at MDA J and from 54-1023 will be presented in a sampling and analysis plan and will be used to locate additional borehole(s) around MDA H.

The draft RFI report has been submitted to Cheryl Overstreet, EPA Region 6. Eliza indicated that the Team might have Cheryl's comments by the end of March. LANL is planning to submit the RFI report to NMED by mid-April followed by a release to the public, perhaps through the web page.

In the meantime, Eliza, Neelam and Paula will work on a Record of Communication (ROC) to document NMED's comments on the RFI Report and LANL's response to those comments. NMED will include the ROC along with the approval letter and invoice to LANL for the RFI report (NMED may issue two separate letters, Eliza is checking).

Discuss CMS Plan Schedule:

Eliza and Neelam indicated that NMED-HWB believes it is consistent to calculate the radionuclide exposure levels proposed for the human health protection objective according to lifetime, cumulative exposure (at 10^{-5}) as per 1999 EPA CERCLA guidance. This is consistent with EPA's Risk Q & A which clarified "that 15 mrem/year is not a presumptive cleanup level under CERCLA, but rather site decision-makers should continue to use the risk range when ARARs are not used to set cleanup levels. (The Team will decide where to go from here as the CMS progresses). Eliza also included a list of current applicable standards preferred by NMED at the end of the Draft Data Gap Resolution comments on MDA H dated 3/09/01.

The Team agreed that LANL will submit the CMS Plan to NMED no later than March 30, 2001 with Target Corrective Action Objectives (TCAOs) remaining as drafted during the February 2001 HPT meeting with the understanding that these specific regulatory decisions will be worked out during the CMS. Neelam requested that we incorporate the groundwater issue from the Conclusions and Recommendations section of the MDA H RFI Report into the TCAOs. Upon further review of the CMS Plan, protection of groundwater is addressed in detail in Section 3.0 of the CMS Plan – Corrective Measures and Scope.

NMED comments on the CMS Plan will be discussed at the next HPT meeting. It is important to note that the CMS can proceed and that the TCAOs as currently drafted establish the framework for the evaluation of remedial alternatives to be presented in the CMS Report.

Eliza reiterated NMED's position (which is inherent in the RCRA corrective action process) that the nature and extent of a release from a PRS must be defined before modeling and risk assessment data are presented to NMED.

MDA H Inventory Update:

LANL reported that the revised MDA H inventory would be presented in detail in the CMS Plan and the MDA H RFI Report. The logbook documenting waste disposal activities has been declassified and that total curies of radionuclides disposed of at MDA H are still be calculated. LANL will also include, where possible, a stratification of the types and quantities of waste

disposed in each shaft to better determine the placement and depth of additional boreholes at MDA H and to include in the evaluation of excavation alternatives during the CMS.

Initial Schedule for CMS Report (as outlined in the CMS Plan):

- Initial Screening of Technologies – John handed out an example of a technical memorandum from Rocky Flats which presents a good example of how to screen identified technologies for remedial action to get to a range of alternatives for detailed evaluation. LANL is currently preparing a similar technology memorandum to be submitted to NMED following submittal of the CMS Plan. The memorandum will document the approach to combine the eight alternatives identified by the Team in December 2000 into a range of 3 or 4 alternatives that can proceed directly into a detailed analysis and evaluation during the CMS. This will feed into the CMS report and will be posted on the web page.
- John is to check on the availability of technological screening information for tritium venting.
- John announced a two-day brainstorming session on April 9-10, 2001 with Marc Zocher (LANL cost estimator) and Brian Myers (familiar with MDA H Operations and inventory) to discuss excavation alternatives for MDA H. **Note that the April 9-10 meeting date may move based on personnel availability.**
- John will also schedule an elicitation on MDA H inventory uncertainties.
- Eliza talked about the process being employed for 260 Outfall known as Innovative Technology Remediation Demonstrations (ITRDs), which is a DOE-sponsored activity that brings representatives knowledgeable about specific technologies together to discuss alternatives in a “roundtable” format. DOD, EPA and other representatives participate in ITRD technical advisory groups. This process has been useful for moving the 260 Outfall CMS along and involves less of a facilitated type of session and more of a technical discussion about what applicable technologies are out there and known to work. This is something the HPT should consider for landfills and the MDA H CMS. Eliza will follow up on this for the next meeting and has already provided an example of an ITRD invite letter and minutes from Pantex (see attached e-mail).

Discuss Status of CMS Schedule:

The team revised the overall CMS schedule agreed to during the December 12, 2000 HPT meeting. This schedule is attached. A few of the dates listed for the RFI report have slipped, but the overall schedule remains on target.

Future MDA Work:

NMED suggested that the next two MDAs to be assessed for corrective action should be MDAs C and U.

Next Meeting Agenda (as of 3/19/01):

Finalize RFI Report Conclusions and Recommendations

Discuss NMED Comments on CMS Plan

Discuss Status of Web Page

Discuss Results of April 9 - 10th Excavation Technologies Brainstorming Session

Discuss Future Presentations to CAB ER Subcommittee and Alternatives Work Shop for June 2001

Schedule Tours of Similar Projects at Sandia

Status of MDAs U and C for Future Assessment

Next Meeting Time and Place: Wednesday April 25, 2001, 8:30 am

NMED-OB Conference Room, Santa Fe, New Mexico

Next Meeting Scribe: To be determined

Schedule for Completing MDA H RFI/CMS

MDA H RFI

- 01/05/01 Receive NMED-HWB RFI comments and comment resolution meeting
- 03/15/01 MDA H Report to Cheryl Overstreet (EPA) for risk assessment review
- 03/14/01 Discussed "data gaps and conclusions" for MDA H RFI report
- 04/__/01 MDA RFI Report complete and to NMED

MDA H CMS Milestones

- 01/15/01 Alternative remedies for MDA H identified
- 02/28/01 Draft Public Involvement Plan completed
- 03/06/01 Detailed target corrective action objectives identified and more or less agreed to
- 03/01/01 Public outreach initiated with CAB, Pueblos, and availability sessions
- 03/30/01 CMS Plan complete and to NMED
- 06/__/01 Alternatives assessment for MDA H remedies completed and documented
- 08/__/01 Preferred remedy selection
- 11/__/01 Technical peer review of MDA H CMS Report initiated
- 01/__/02 Technical peer review of MDA H CMS Report completed
- 04/__/02 Core team and legal review of MDA H CMS Report initiated
- 07/01/02 Public Comment notices issued
- 08/01/02 Public comment period initiated
- 10/01/02 Public comment period completed
- 12/20/02 Public comments incorporated into final MDA H CMS Report

MDA H CMS High-Performing Team

Meeting Notes

Meeting Date: April 25, 2001

Meeting Time: 8:30 am – 11:30 am

Meeting Location: NMED-OB Conference Room, Santa Fe, New Mexico

Attendees: Paula Bertino (LANL-ER)
Neelam Dhawan (NMED-HWB)
Mark Coffman (NMED-OB)
Eliza Frank (NMED-HWB)
John Hopkins (LANL-ER)
Woody Woodworth (DOE-AL)

Scribe: Paula Bertino

Agenda and Outcome:

The Team discussed and finalized the date, time, location, and format of the MDA H CMS Corrective Measures Alternatives Open House for Stakeholders

- The Open House will be held on Tuesday June 19, 2001, in the main DOE LAAO conference rooms from 4:30 pm – 7:30 pm. Woody will confirm the availability of the LAAO conference room and about DOE be a co-host of the Open House. The Team agreed that the CAB should be the host and John will work with Carmen and Sandra to finalize these plans with the CAB. NMED will attend and may make a brief presentation (to be determined by Eliza and Neelam).
- The team agreed to a Open House format consisting of individual tables or posters for the following subject areas manned by the identified individual:
 - Overall MDA H RFI – Rich Mirenda, LANL ER Project
 - Excavation Alternative – Marc Zocher, ??
 - Cover Alternative – Steve Dwyer, SNL & Brent Newman, LANL
 - Stabilization Alternative – Techcon (John and Woody to confirm)
 - RCRA Corrective Action Regulatory Process RFI/CMS and Long-Term Monitoring and Stewardship – Paul Schumann, LANL ER Project
 - NNCAB – Carmen to communicate with CAB
- The HPT with help from Sandra and Carmen, will draft a two-sided document consisting of an MDA H fact sheet and notice of the Open House for the NNCAB ER Subcommittee to distribute

(using the ER Project's mailing list) as the host of the Open House. Newspaper advertisements will also be used to announce the Open House. John will work with Terry Rust to ensure consistency between the MDA H fact Sheet and the fact sheet for the recent Airport Landfill public meeting.

- Woody will provide the fact sheet/open house announcement at the May 14, 2001 CAB ER Subcommittee meeting and Woody, John and Eliza will attend to discuss the details of the Open House.
- Woody will distribute comments received on the MDA H CMS PIP from the CAB ER Subcommittee to the HPT next week for review and to determine if a response is required.
- During the HPT meeting, the Team attempted to find and pull up the MDA H information now on the LANL external Web Page; however, it could not be located. John has since provided the link to view the CMS Plan: **first go to <http://erproject.lanl.gov>, then click on Library, then to Work Plans/reports, then to Corrective Measures Study.** This item no longer needs to be on the HPT agenda.
- The Team agreed that the MDA H RFI Report Conclusions and Recommendations sections cannot be finalized until EPA's issues associated with risk and additional data needs regarding the extent of contamination are addressed. EPA, NMED and LANL risk assessors are scheduled to meet May 4th to discuss outstanding risk issues. In addition, John will provide Rich with recent tritium and VOC data from borehole 54-1023 at MDA H to aid in the risk/extent discussion. The MDA H RFI Report will be finalized and submitted to NMED by mid-May 2001.
- Eliza is working on the Record of Communication to document NMED-HWB comments on the RFI Report and LANL's response to those comments and anticipate having this complete by the end of May 2001.
- The team discussed the following supplemental MDA H RFI activities:
 - LANL will provide NMED-HWB with validated fixed analytical data (VOCs and tritium) from borehole 54-1023, by 5/4/01 for the risk meeting with EPA
 - John is working with ESH-17 to determine when tritium data collected by the ESH-17 monitoring station at site boundary of MDA H will be available and will communicate this information to Eliza.
 - The objectives of and how to optimize the locations, depths, borehole completion, and sample collection strategy of additional boreholes to be installed at MDA H. LANL will submit a draft supplemental RFI SAP to NMED-HWB by 5/5/01 that will include the recent data from borehole 54-1023. Field activities will begin either the week of May 7th or 14th.
 - The costs/benefits of a more "iterative" schedule for borehole installation based on review of analytical results and goal of determining extent was discussed.
 - The Team agreed that results from the supplemental MDA H RFI activities will be submitted to NMED-HWB in an Addendum to the MDA H RFI Report and the CMS Report.
- The Team discussed NMED-HWB comments on the MDA H CMS Plan. NMED-HWB will send an approval letter for the CMS Plan that will document the Bureau's position and comments, but that will not require a response. The approval letter will also state that the additional data gathering

HPT Schedule for Completing MDA H RFI/CMS

Activities in bold have been completed, those not in bold remain to be completed, and those in italics were added by NMED-HWB as placeholders.

MDA H RFI Milestones

- 01/05/01** Receive NMED-HWB RFI comments and comment resolution meeting
- 03/15/01** MDA H Report to Cheryl Overstreet (EPA) for risk assessment review
- 03/14/01** Reviewed "data gaps and conclusions" for MDA H RFI report
- 04/25/01** *HPT agrees that RFI Addendum will summarize latest data collection at H*
- 05/3/01** *Planned conference call with LANL, EPA and HWB regarding MDA H RFI risk screening*
- 05/7/01** *LANL submit tritium and VOC data on borehole 54-1023 to HWB*
- 05/9/01** *Draft SAP for MDA H boreholes to HWB*
- 05/18/01** *HWB written approval of supplemental RFI SAP, to be provided by LANL in a Record of Communication*
- 05/21/01** MDA H RFI Report complete and to NMED (*was 04/01; include changes*)
- 05/21/01** *{HWB invoice and fee letter to LANL for MDA H RFI Report}*
- 06/01/01** *{HWB approval of RFI Report (subsequent submittal of RFI Addendum by LANL (12/21/01, and ROC for comments/responses)}*
- 03/00/02** *RFI Addendum submitted to HWB for approval*

MDA H CMS Milestones

- 01/15/01** Alternative remedies for MDA H identified
- 02/28/01** Draft Public Involvement Plan completed
- 03/06/01** Detailed target corrective action objectives identified and more or less agreed to
- 03/01/01** Public outreach initiated with CAB, Pueblos, and availability sessions
- 03/30/01** CMS Plan complete and to NMED
- 04/23-24** *Excavation Technologies & Cost Estimates Brainstorming Session*
- 05/14/01** *HPT briefing to CAB ER Subcommittee for June 19 Public Open House*
- 05/22/01** *Tour of Similar Landfill Projects at Sandia (SNL)*
- 05/25/01** *HWB invoice and fee letter to LANL for CMS Plan*

MDA H CMS Milestones (cont.)

- 06/__/01 Alternatives assessment for MDA H remedies completed and documented [= Tech. Memo]
- 06/__/01 *HWB approval of CMS Plan (includes request for an RFI Addendum and new Table 2-1 in the CMS Report)*
- 06/19/01 *CAB/ER host an MDA H Public Open House in Los Alamos*
- 06/__/01 *Discuss format and content of RFI addendum (data review)*
- 07/__/01 *Begin monthly submittals of CMS Status Reports (format tbd)*
- 08/__/01 Preferred remedy selection
- 11/__/01 Technical peer review of MDA H CMS Report initiated
- 01/__/02 Technical peer review of MDA H CMS Report completed
- 04/__/02 Core team and legal review of MDA H CMS Report initiated
- 07/01/02 Public Comment notices issued
- 08/01/02 Public comment period initiated
- 10/01/02 Public comment period completed
- 12/20/02 Public comments incorporated into final MDA H CMS Report

MDA H CMS High-Performing Team

Meeting Notes

Meeting Date: October 15, 2001

Meeting Time: 1:00 – 2:45 pm

Meeting Location: NMED-HWB Conference Room, Santa Fe, New Mexico

Attendees: Paula Bertino (LANL-ER)
Neelam Dhawan (NMED-HWB)
Eliza Frank (NMED-HWB)
John Hopkins (LANL-ER)
Woody Woodworth (DOE-AL)

Scribe: Paula Bertino

Agenda and Outcome:

Review Data from FY01 Supplemental RFI Sampling

- LANL provided preliminary analytical results for surface sediment, and borehole core and air samples collected in June 2001 from the two additional boreholes installed at MDA H in accordance with the "Plan for Supplemental Sampling for the RCRA Facility Investigation at Material Disposal Area H," (LA-UR-01-2516) and the corresponding Record of Communication dated June 11, 2001. The data will be submitted and evaluated in the Addendum to the RFI Report. Analytical data from sample number MD54-01-0152 was inadvertently left out and will be provided in the RFI addendum and the surface sediment data will be separated from the borehole data.
- LANL also provided the tritium results from the first round of air samples collected from the air monitoring station located adjacent to MDA H. LANL has not yet received data collected during August and September 2001 due to analytical laboratory backlogs. This data will be evaluated against background values consistent with those used for data from MDA G and submitted in the Addendum to the RFI Report. Additionally, the air sample data will be presented in consistent units (pCi/L) to allow comparison.
- NMED-HWB expressed concern that a sample was not collected from the Cerro Toledo formation, which was encountered at a depth of 255 to 265 feet below ground surface (bgs) in borehole 54-15462. The Plan for Supplemental Sampling for the RCRA Facility Investigation at Material Disposal Area H," (LA-UR-01-2516) and corresponding Record of Communication dated June 11, 2001 stated that a sample was to be collected from the bottom of this borehole from an approximate total depth of 300 feet bgs, which was to have been within the Cerro Toledo formation. However, the formation was encountered at a shallower depth and was not as thick as originally anticipated.

Discuss Format and Schedule for RFI Addendum

- The Team agreed that the Addendum to the RFI Report would include the fracture map from MDA J; new data and corresponding figures; cross sections (to be identified by Eliza); results of chloride studies; and only those sections of the RFI report requiring revision to incorporate the new data including portions of the revised site conceptual model, risk screening assessments, and the conclusions and recommendations. LANL is planning to submit the RFI Addendum to NMED-HWB before the end of December 2001.

RSI Response

- The Team discussed NMED-HWB RSI comments on the MDA H RFI Report and LANL's responses to each comment. LANL agreed to revise the text portion of the RFI report (including figures and tables) and Appendix D to address NMED-HWB comments. LANL will provide NMED-HWB with a redlined version of the RFI report for review prior to resubmittal. To ensure adequate time to address all RSI comments and revise the RFI report LANL has requested a 45-day extension to the original 30-day response period. LANL's response to specific comments and the revised RFI report will be submitted to NMED-HWB concurrently before December 23, 2001.
- LANL will provide the recently prepared detailed description of the waste inventory by shaft at MDA H in the RFI report addendum and in the CMS Report.

CMS Report Schedule

- NMED-HWB indicated that they anticipate formally approving the CMS Plan for MDA H by the end of November 2001. In accordance with the Module VIII of the Laboratory's Hazardous Waste Facility Permit, upon receipt of written approval from NMED-HWB for the CMS plan, LANL will begin submitting signed monthly management status reports as described in the CMS plan. A draft monthly progress report outline is attached to these minutes for NMED-HWB review and approval.
- LANL indicated that the first four sections of the MDA H CMS report are complete and undergoing review prior to the mid-November 2001 formal internal peer review. The appendices to the CMS report are also close to completion. LANL is planning to deliver the first four sections of the CSM report and the appendices to NMED-HWB for review in January 2002.
- The Team reviewed the overall CMS schedule last updated on July 31, 2001 (see below). A few of the dates listed for the RFI report and the addendum to the report slipped a few weeks, but the overall schedule remains on target.

RFI Report for MDAs L and G

- The Team agreed that the RFI reports for MDAs G and L should be separated and resubmitted separately. NMED-HWB emphasized that the RFI reports should not be submitted until the nature and extent of contamination from each MDA has been defined.

RFIs for Other MDAs

- The Team acknowledged that as RFIs are completed for other MDAs including those for MDAs B, C and U, the MDA H RFI Report and CMS Plan could be used as a template, where appropriate.

Next Focus Group Meeting

- The next MDA H CMS Focus Group meeting is scheduled for Tuesday, November 13, 2001. NMED-HWB and LANL ER Project staff will not be in attendance.

Next Meeting Time and Place: To be determined

Agenda: Technologies assessment for MDA H remedial alternatives

HPT Schedule for Completing MDA H RFI/CMS

Activities in bold have been completed, those not in bold remain to be completed, and those in italics are minor milestones to assist HPT members with tracking details.

MDA H RFI Milestones

- 01/05/01** Receive NMED-HWB RFI comments and comment resolution meeting
- 03/01** *Additional fieldwork at borehole 54-1023 (data collection)*
- 03/14/01** Reviewed "data gaps and conclusions" for MDA H RFI report
- 03/15/01** MDA H Report to Cheryl Overstreet (EPA) for risk assessment review
- 04/23-24** *Excavation Technologies & Cost Estimates Brainstorming Session*
- 04/25/01** *HPT agrees that RFI Addendum will summarize latest data collection at H*
- 05/3/01** *Conference call regarding LANL, EPA and HWB risk screening comments*
- 05/14/01** *Risk comments resolved between EPA, HWB and LANL 05/9/01*
- 05/17/01** Supplemental Sampling Plan (SAP) for new MDA H boreholes submitted to HWB (includes analytical results for 03/01 samples collected at borehole 54-1023)
- 05/31/01** MDA H RFI Report submitted {*date slip, was 4/01, delayed to include HPT changes, revised conclusions and recommendations...*}
- 06/06/01** Meet to discuss SAP and planned fieldwork, ROC prepared. Also discussed tritium data from borehole 54-1023
- 06/27/01** LANL begins drilling 2 new boreholes at MDA H
- 10/10/01** Received RSI on MDA H RFI Report from NMED-HWB
- 10/15/01** HPT discuss format and content of RFI addendum and RSI comments
- 10/15/01** HPT review new borehole data and fieldwork activities
- 12/23/01** Submittal of RSI Response and Revised MDA H RFI Report
- 04/__/01** RFI addendum submitted to NMED-HWB (LANL plans to submit the addendum at an earlier date)

MDA H CMS Milestones

- 01/15/01 Alternative remedies for MDA H identified
- 02/28/01 Draft Public Involvement Plan completed
- 03/06/01 Target corrective action objectives identified and more or less agreed to
- 03/01/01 Public outreach initiated with CAB, Pueblos, and availability sessions
- 03/30/01 Submittal of CMS Plan
- 5/14/01 HPT briefing to CAB ER committee for June 27 Public Open House*
- 5/22/01 Tour of Similar Landfill Projects at Sandia (SNL)*
- 06/11/01 CAB ER committee meeting in preparation for Open House
- 06/27/01 CAB/ER host an MDA H Public Open House in Los Alamos
- 08/30/01 LANL completed and documented the technologies assessment for MDA H remedial alternatives
- 11/___/01 *HPT to discuss technologies assessment for MDA H remedial alternatives*
- 11/30/01 *NMED-HWB approval of MDA H CMS Plan*
- 12/15/01 *Begin monthly submittals of CMS Status Reports (draft format attached)*
- 11/30/01 Technical peer review of MDA H CMS Report initiated
- 01/___/02 Technical peer review of MDA H CMS Report completed
- 02/28/02 Preferred remedy selection
- 04/___/02 Core team and legal review of MDA H CMS Report initiated
- 07/01/02 Public Comment notices issued
- 08/01/02 Public comment period initiated
- 10/01/02 Public comment period completed
- 12/20/02 Public comments incorporated into final MDA H CMS Report

MDA H CMS High-Performing Team

Meeting Notes

Meeting Date: November 27, 2001

Meeting Time: 1:00 – 3:00 pm

Meeting Location: NMED-HWB Conference Room, Santa Fe, New Mexico

Attendees: Paula Bertino (LANL-ER)
Neelam Dhawan (NMED-HWB)
Eliza Frank (NMED-HWB)
John Hopkins (LANL-ER)
Woody Woodworth (DOE-AL)

Scribe: Paula Bertino

Agenda and Outcome:

RSI Response and Revised MDA H RFI Report

- The Team agreed that Figure 2.3-2 from the RFI report would be revised to show the entire drainage north and south of MDA H and include all four sediment sample locations. NMED-HWB concurred with the changes made to Figure 2.3-6 to address RSI comments, which is the only other figure to be changed in the revised RFI report. On November 28, 2001, LANL provided NMED-HWB the draft RSI response and redlined version of the revised MDA H RFI Report for review and comment. LANL will incorporate NMED-HWB's comments and submit the RSI Response and revised RFI report prior to the December 23, 2001 deliverable date.

Discuss Format and Schedule for RFI Addendum

- During the October 15, 2001 HPT meeting, NMED-HWB expressed concern that a sample was not collected from the Cerro Toledo formation, which was encountered at a depth of 255 to 265 feet below ground surface (bgs) in borehole 54-15462. The Plan for Supplemental Sampling for the RCRA Facility Investigation at Material Disposal Area H," (LA-UR-01-2516) and corresponding Record of Communication dated June 11, 2001 stated that a sample was to be collected from the bottom of this borehole from an approximate total depth of 300 feet bgs, which was to have been within the Cerro Toledo formation. However, the formation was encountered at a shallower depth and was not as thick as originally anticipated.

To address this issue, NMED requested and LANL agreed to gain access to the bottom of boreholes 54-1023, 54-15461, and 54-15462 for further vapor sampling by using an airlift system to remove the slough remaining in the bottom 25% of each borehole. This process will require blowing ambient air down the borehole through drill rods while also applying a vacuum to the surface casing. The slough will then be collected at the surface through a dust suppression system. Due to the injection of air into the boreholes, a portion of the soil vapor

in the surrounding matrix may be diluted with ambient air. However, the vacuum at the surface will minimize the potential for dilution. To ensure that subsequent vapor sampling is not affected by the introduction of ambient air downhole, NMED-HWB and LANL will identify and agree upon specific steps to be taken to ensure that a sufficient purge has been achieved prior to the collection of tritium and VOC vapor samples. To meet the April 2002 submittal schedule for the RFI Addendum, which will include analytical results from the tritium and VOC vapor samples to be collected following the removal of slough from the bottom of the three boreholes, NMED is requesting that this fieldwork be completed by December 22, 2001.

- The Team agreed that the RFI Addendum would follow the RFI Report outline. For those sections where there is no change in the original information provided in the RFI Report, a statement to that effect will be made. During the October 15, 2001 HPT meeting the Team agreed that the addendum would include the fracture map from MDA J; new data and corresponding figures; cross sections (to be identified by Eliza); and results of chloride studies. The team agreed that due to the additional fieldwork described above, the RFI Addendum would be submitted until April 2002 in accordance with the preliminary schedule.

CMS Plan Approval and Schedule

- NMED-HWB indicated that the approval letter for the MDA H CMS Plan should be issued by November 30, 2001. In accordance with the Module VIII of the Laboratory's Hazardous Waste Facility Permit, upon receipt of written approval from NMED-HWB for the CMS plan, LANL will begin submitting signed monthly management status reports as described in the CMS plan. NMED-HWB staff will review and provide comments on the progress report outline provided by LANL with the October 15, 2001 meeting.
- LANL confirmed that the first four sections of the MDA H CMS report would undergo preliminary internal peer review on November 28, 2001. The appendices to the CMS report are also close to completion. LANL is still planning to deliver the first four sections of the CSM report and the appendices to NMED-HWB for review in January 2002.

RFI Report for MDA L

- LANL provided NMED-HWB with the MDA L pore gas monitoring results and FY01 annual report for consideration in determining whether the nature and extent of VOC contamination at MDA L has been defined.

Screening of Corrective Measure Technologies

- The Team briefly discussed the preliminary draft of Sections 2.1 – Screening of Corrective Measure Technologies and Section 2.2 – Identification of Corrective Action Alternatives of the MDA H CMS Report. NMED-HWB's two main comments were that the majority of the technology descriptions and the rationale for their elimination from further consideration are incomplete and that long-term stewardship concerns are not adequately addressed. NMED-HWB indicated that they would provide written comments to LANL within the next two weeks.

Citizen and Interest Group Letters

- The Team briefly discussed letters recently received by NMED from citizen interest groups including the Los Alamos Study Group regarding MDA H and public participation

in the CMS process. The Team agreed that all applicable RCRA requirements are and will continue to be followed for the CMS process at MDA H including those for public participation. However, LANL expressed concern regarding the fact that because shaft 9 remains on the Laboratory's Hazardous Waste Facility Permit and has not yet been moved to Module VIII of the permit, it may be subject to RCRA closure requirements.

Next Meeting Time and Place: To be determined

Agenda: Technologies assessment for MDA H remedial alternatives

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