



Department of Energy
 Albuquerque Operations Office
 Waste Isolation Pilot Plant Project Office
 P. O. Box 3090
 Carlsbad, New Mexico 88221

MAR 2 1993

BEST AVAILABLE COPY

Ms. Judith M. Espinosa, Secretary
 State of New Mexico Environment Department
 Harold Runnels Building
 1190 St. Francis Drive, P.O. Box 26110
 Santa Fe, New Mexico 87502

Dear Ms. Espinosa:

Enclosed for your information is Revision 1 of the report entitled Waste Isolation Pilot Plant No-Migration Determination Annual Report for the Period October 1991 Through August 1992. This revision has been prepared by the Department of Energy in response to comments transmitted from the Environmental Protection Agency Region VI Office on January 21, 1993. These comments and the Department of Energy's written resolutions are also enclosed.

If you have any questions regarding this report, please contact Dr. James A. Mewhinney at (505) 887-8143.


 Arlen Hunt
 Project Site Manager

Enclosures

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 ENTERED

- X C&O
- X PRC
- Anderson
- X Carrell
- X Cox
- Kuntz
- X Lee
- Mugno
- X Reed
- Trego
- Wadd
- X Conway
- X W. Caplinger
- X Weyandt
- X Gaister
- X K. Donovan
- _____

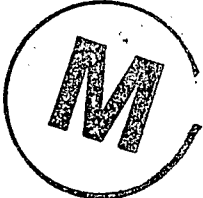


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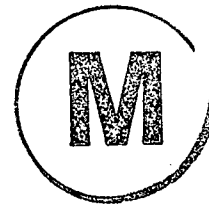
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**Responses to EPA Region VI Comments on
"No-Migration Determination Annual Report for the Period October 1991 Through August 1992"**


Comment	Response
<p>Page 2-3; 2nd paragraph</p> <p>The Region will like to see, in a revised Report, a table comparing the mean headspace concentrations of each drum sampled. This information would be meaningful for the Final No Migration Determination. However, for compliance with the current No Migration Variance (NMV), the Region agrees with the statements contained in this paragraph.</p> <p>Note: Clarification on this comment was requested (by Mr. Daryl Mercer of the WIPP Project Integration Office) from Mr. Richard Mayer of EPA Region VI on 2-3-93. Mr. Mayer stated that the WIPP should disregard this comment. No response or modification to the report is needed to address this comment.</p>	<p>No response necessary per conversation with Mr. Richard Mayer on 2-3-93.</p> 

Comment	Response
<p>Page 2-6; 2nd paragraph</p> <p>Does the 500 parts per million limit on flammable VOC's in a container shipped apply only for the test phase, or does also include the disposal phase? Please clarify in the report.</p> <p>Note: Clarification on this comment was requested from Mr. Richard Mayer of EPA Region VI on 2-3-93. Mr. Mayer stated that this comment is in reference to the WIPP transportation requirement that limits the concentration of flammable VOCs in containers shipped in the TRUPACT-II to 500 ppm. He stated that he would like to see a brief statement regarding the origin of this requirement (i.e., Is it a DOE self-imposed requirement or is there a regulatory driver?).</p>	<p>The sentence beginning with "Current transportation requirements" has been replaced by the following sentence:</p> <p>The Certificate of Compliance (C of C) issued by the United States Nuclear Regulatory Commission for the TRUPACT-II shipping container (NRC 1989) limits the concentration of flammable VOCs in the headspace of containers shipped in the TRUPACT-II to 500 ppm."</p> <p>* Footnote: This requirement is applicable as long as the DOE uses to the TRUPACT-II to transport waste to the WIPP facility. This may include both the Test Phase and the Disposal Phase of the project. The limit on flammable VOCs is subject to change if the DOE chooses to use a different shipping container, or the NRC revises the C of C.</p> <p>The Certificate of Compliance from the NRC has been included in the reference section.</p>

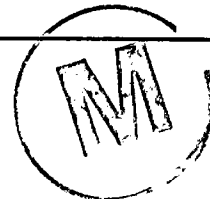


Comment	Response
<p>Page 2-8; 2.5.1</p> <p>The Region would like a more detailed discussion on the reasons why the five drums were rejected. Also include in the discussion the number of drums sampled versus the number of drums rejected. In addition, if DOE sampled the drum with free liquids (the liquid inside the can), what were the analytical results? Also, for the purposes of obtaining a final No Migration, drums containing free liquids should have the liquids analyzed for hazardous constituents.</p>	<p>The Idaho National Engineering Laboratory certifies drums for use in the WIPP Experimental Bin Program in accordance with the WIPP Waste Acceptance Criteria (WAC), Revision 4, and the Safety Analysis Report for the TRUPACT-II Shipping Package (SARP). These documents contain waste certification requirements that must be demonstrated prior to emplacement of waste at the WIPP or transportation in the TRUPACT-II. Additionally, waste drums selected for the Bin Program are characterized to determine compliance with the conditions of the NMD. No drums were excluded from Bins IDRFBN9100001 through IDRFBN9200004 due to noncompliance with the NMD. The text of the report and Table 2-14 have been revised as follows to address this issue:</p> <p>Section 2.5.1 text revisions:</p> <p>The last two sentences have been deleted are replaced with the following text as a new paragraph:</p> <p>Drums are excluded by the INEL from the WIPP Experimental Bin Program for nonconformances with the WIPP Waste Acceptance Criteria (WIPP-DOE-069), the Safety Analysis Report for the TRUPACT-II Shipping Package (NuPac 1989), the WIPP Waste Analysis Plan (DOE/WIPP 91-005), and the NMD. No drums were excluded from Bins IDRFBN9100001 through IDRFBN9200004 due to noncompliance with the NMD requirements. A total of four drums out of 32 examined in support of Bins IDRFBN9100001 through IDRFBN9200004 have been excluded due to noncompliance with the WIPP WAC. One drum was determined to contain U-235 and was excluded from the program for the present time. Currently, the INEL cannot certify drums that contain U-235. The excluded drums and reasons for exclusion are shown in Table 2-14.</p> <p>Table 2-14 revision: The column labeled "Reason for Exclusion" has been changed to read "Nonconformance." A new column labeled "Reason for Exclusion" has been added. The reason for exclusion for all drums with the exception of Drum RF004500598 is listed as "WIPP WAC." Drum RF004500598 is listed as "Not applicable" since this drum has not been permanently excluded from the Bin Program.</p> <p>The Safety Analysis Report for the TRUPACT-II Shipping Package (NuPac 1989) has been added to the reference section of the report.</p> <p>The drum listed in Table 2-14 as containing free liquid (Drum #RF004500559) was excluded from the program after real-time-radiography (RTR) indicated the presence of free liquid in an inner container. Since RTR is conducted prior to analytical sampling and the drum was excluded at that point, no samples were taken from this drum.</p> <p>Drum RF005400341 was found to contain a full can of liquid adhesive during characterization activities in support of loading Bin IDRFBN9200005. As such, in accordance with the WIPP WAC, this drum was excluded from the Bin Program. The liquid found inside the sealed 8 oz. rolled-top can was not sampled. However, a headspace sample collected directly above the liquid, with the top of the can removed, was found to contain 890 ppmv xylenes and 6300 ppmv 4-methyl-2-pentanone. Sampling and analysis of the 55-gallon poly bag headspace indicated the presence of approximately 10 ppmv of xylenes and no 4-methyl-2-pentanone. Sampling and analysis of the drum headspace (i.e., under the drum lid) indicated the presence of approximately 10 ppmv of xylenes and no 4-methyl-2-pentanone. These analyses supported the conclusion that the contents of the can were the same as those listed on the manufacturer's label, which was still intact and attached to the can.</p>

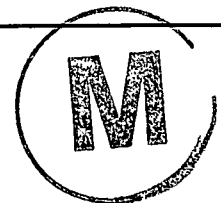


Comment	Response
<p>Page 2-8; 2.5.1 (Continued)</p>	<p>The current NMD Annual Report includes waste characterization data for Bins IDRFBN9100001 through IDRFBN9200004. Since this drum was characterized in support of Bin IDRFBN9200005, information regarding this drum will be included in the next NMD Annual Report.</p> <p>The current NMD does not require sampling of liquids within drums. Since the NMD Annual Report is designed to demonstrate DOE's compliance with the current NMD, no information regarding the sampling of liquids will be included in this report. However, the DOE understands that additional waste characterization information is necessary for inclusion in the future WIPP Disposal Phase No-Migration Variance Petition. The DOE looks forward to working with the EPA to define the waste characterization information necessary to obtain a No-Migration Variance for the Disposal Phase of the project.</p>
<p>Page 2-9; 3rd paragraph</p> <p>The Region did not see where any drum had exceeded the 500 ppmv total flammable VOC limit. If there other flammable VOC's detected that are not shown on Tables 2-5 thru 2-8, please include these additional results in those tables (just include a column which gives the total concentration and the number of flammable VOC's detected, e.g., 200ppm, 15FVOC's). Also, is DOE including VOC's that are not actually being detected in the sample, but, for computing the average, have included the VOC at half the detection limit? Please clarify in the appropriate locations of the Report.</p>	<p>A column has been added to Tables 2-5 through 2-8 which lists the concentration and number of flammable VOCs detected in each 55-gallon poly bag and inner layers of containment (with > 1L void volume) of each drum analyzed. A footnote has been added to Tables 2-5 through 2-9 to explain that, for the purpose of calculating the total flammable VOC concentration, a value of one-half the MDL is used when a flammable VOC is not detected in the sample. Another footnote has been added to Table 2-3 and Tables 2-5 through 2-8 to explain that a value equal to the MDL (adjusted to the 90% upper confidence limit) is reported when the constituents analyzed for comparability to the estimates used by the DOE in the No-Migration Variance Petition are not detected by the analytical procedure.</p> <div style="text-align: right;">  </div>
<p>Pages 2-10 thru 2-19; Tables 2-1 thru 2-9</p> <p>Please include in the revised report analytical results in ppmv or ppbv.</p>	<p>The tables in Chapter 2 have been modified to list concentrations in both volume percent and parts per million by volume (ppmv).</p>

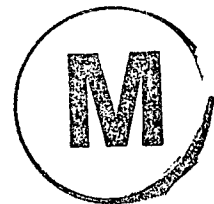
Comment	Response
<p>Page 2-10; Table 2-10</p> <p>Please include the hazardous waste codes for each type or drum and how this determination was made. Also, did the determination change when visually inspected?</p>	<p>A column listing the hazardous waste codes for each drum has been added to Table 2-1. The following text has been added as the fifth paragraph of Section 2.0 of the report:</p> <p>Table 2-1 also contains the RCRA hazardous waste codes for each drum of waste sampled. Initial determinations of hazardous waste codes are made based on knowledge of the materials and processes used to generate the waste, and EGG-WM-6503, "TRU Waste Sampling Program, Volume 1, Waste Characterization (September 1985)," which is the source of the basic data used by the EPA Office of Solid Waste in determining mean and maximum headspace concentrations listed in the NMD. If analysis performed for the WIPP Program indicates that additional hazardous waste codes are appropriate, they will be added as necessary. There have been no changes in hazardous waste codes subsequent to visual examination or headspace sampling for drums of waste characterized to date.</p> <p>EGG-WM-6503, "TRU Waste Sampling Program, Volume 1, Waste Characterization (September 1985)," has been added to the reference section of the report.</p>
<p>Page 2-15; Tables 2-5 thru 2-8</p> <p>Please include in the report the measured hydrogen and methane concentrations (volume %) for each drum.</p>	<p>Two columns have been added to Tables 2-5 through 2-8 listing the measured hydrogen and methane concentrations, in volume percent and ppmv, for 55-gallon poly bag and each inner layer of containment for each drum.</p>
<p>Page 3-8; Section 3.1.2.3</p> <p>When does DOE plan to start monitoring VOC-10, when it receives waste or will DOE obtain some samples prior to waste receipt? Please clarify.</p>	<p>The following text has been added to clarify Section 3.1.2.3:</p> <p>Test samples are planned for calendar year 1993 to confirm operability of Station VOC-10. Regulatory compliance sampling will begin when waste is received at the WIPP facility prior to emplacement of waste in the test room.</p>
<p>Page 3-10; 3.1.5, Program Accuracy</p> <p>Please clarify in the report the last two sentences of the first paragraph pertaining to the audit gas source.</p>	<p>The text of Section 3.1.5 has been modified as follows to clarify the discussion regarding the audit gas source:</p> <p>As required in the NMD, the DOE has developed a procedure to evaluate method relative accuracy (MRA). The NMD defines MRA sampling as the concurrent collection of matrix spike and matrix duplicate samples. For the MRA sampling procedure developed by the DOE, approximately 11 liters of gas are collected in each of two sample canisters using the sampling system (See Figure 3-2). An audit gas source (e.g., Scott Micrograv Gas Mixture) is then connected to the sampling system inlet, and 1 liter of this gas is added to the canister connected to Port 1 (See Figure 3-3). The contents of this canister represent the matrix spike sample; the other canister (Port 2) contains the matrix duplicate sample.</p>



Comment	Response
<p>Page 3-10; 3.1.5, last paragraph</p> <p>Please explain in the report the revisions to the MRA sampling procedure at Station VOC-1.</p> <p>Note: The text "Page 3-10 ... report the" was not included in the January 21, 1993, formal transmittal from EPA. This text was obtained from Mr. Mayer on 2-3-93.</p>	<p>The text of Section 3.1.5 has been modified as follows to explain the revisions to the MRA sampling procedure at VOC-1:</p> <p>The first field evaluation of the MRA step-by-step standard operating procedure (SOP) at Station VOC-1 revealed that the sequence of some of the activities needed to be changed. These changes were needed so that the SOP is consistent with the installed sampler configuration. The conceptual MRA procedure has remained the same as described above. The SOP has been revised and is being re-evaluated at Station VOC-1.</p>
<p>Page 3-11; Program Completeness</p> <p>Please clarify in the report why samples at Station VOC-1 are considered test samples and are not part of the historical monitoring data for WIPP.</p>	<p>Samples collected at Station VOC-1 are not considered test samples. The text of Section 3.1.6 has been amended as follows to clarify this point:</p> <p>Completeness for the field effort was determined based on the sampling at Station VOC-1, as this was the only scheduled sampling during the period. Samples collected at Stations VOC-2, 8, and 9 are considered to be test samples and are not a part of the overall monitoring program at this time.</p>
<p>Page 3-11; last paragraph</p> <p>Please clarify in the report the second sentence pertaining to air sample matrices.</p> <p>Page 3-12; 2nd paragraph</p> <p>Please clarify in the report the last sentence pertaining to matrix specific MDLs.</p>	<p>The text of Section 3.1.7 has been amended as follows to (1) clarify the discussion on air sample matrices, (2) clearly define the term method detection limit (MDL) and to delineate the NMD requirements for the determination of matrix-specific MDLs for the WIPP VOC Monitoring Program, and (3) provide a summary of the results of the MDL studies conducted during the reporting period.</p>



Comment	Response
<p>Page 3-16; Figure 3-1</p> <p>The figure included in the report showing the locations of the monitoring stations is fuzzy and the print is small in certain areas. Please include in the report a larger and clearer map.</p>	<p>A new figure in 11" x 17" format has been provided in the report.</p>
<p>Other Modifications to Second NMD Annual Report</p>	
<p>The following section has been added to explain the DOE's reason for revising the report:</p> <p style="text-align: center;">PREFACE</p> <p>This report was originally submitted to the Environmental Protection Agency (EPA) Region VI Office and the EPA Office of Solid Waste and Emergency Response on November 14, 1992, as required by the Conditional No-Migration Determination for the WIPP.</p> <p>Revision 1 of this report has been prepared by the Department of Energy in response to comments transmitted from the EPA Region VI Office on January 21, 1993.</p>	



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