Department of Energy
Carlsbad Area Office
P. O. Box 3090
Carlsbad, New Mexico 88221

August 14, 1998

Dr. Robert S. (Stu) Dinwiddie
Hazardous & Radioactive Materials Bureau
New Mexico Environment Department
P.O. Box 26110
Santa Fe, New Mexico 87502

Subject: Waste Isolation Pilot Plant Comments on the Waste Isolation Pilot Plant Draft Permit No. NM4890139088-TSDF

Dear Dr. Dinwiddie:

In accordance with the Fact Sheet and the Legal Notice No. 98-02 dated May 15, 1998, the United States Department of Energy and Westinghouse Electric Company's Waste Isolation Division (WID) (Collectively, Permittees) submit their second set of comments on the Waste Isolation Pilot Plant (WIPP) Draft Permit issued by the New Mexico Environment Department on May 15, 1998. The first set of comments was submitted to you on May 28, 1998.

The enclosed comments reflect our concerns that there are aspects of the draft permit which would greatly hinder the operation of the WIPP facility, as well as other programs administered by the National TRU Waste Program, without benefiting human health or the environment. These comments propose changes that will make operation at the WIPP facility more efficient and cost effective while fully protecting human health and the environment. In addition, we believe the draft permit contains many provisions that are more stringent than federal requirements. Since the New Mexico Hazardous Waste Act prohibits the Environmental Improvement Board (EIB) from adopting regulations for managing hazardous waste that are more stringent than federal requirements without a hearing, those more stringent requirements should be the subject of an EIB hearing before being made part of the final permit. If the final permit NMED intends to issue does not reflect the changes set forth in these comments, Permittees request a public hearing pursuant to 20 NMAC 4.1.901.A.3.

We look forward to obtaining a final permit that will allow us to accomplish our mission of disposing of transuranic waste from the nations's nuclear weapons complex as soon as possible.

If you have any questions, please contact Michael H. McFadden at (505) 234-7486.

Sincerely,

for:
Michael H. McFadden, Acting
Carlsbad Area Office
U.S. Department of Energy

Joseph L. Epstein, General Manager
Waste Isolation Division
Westinghouse Electric Company

Attachment

blind cc w/o attachments:
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COMMENTS
ON THE DRAFT HAZARDOUS WASTE FACILITY PERMIT
FOR THE
WASTE ISOLATION PILOT PLANT

Submitted by the
U.S. Department of Energy
and
Westinghouse Electric Company
Waste Isolation Division

August 14, 1998

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY

The United States (or U.S.) Department of Energy (DOE), as owner and operator of the Waste Isolation Pilot Plant (WIPP), and the Westinghouse Electric Company's Waste Isolation Division (WID), as co-operator of WIPP, submit these comments on the draft Hazardous Waste Facility Permit (Draft Permit) for the WIPP issued on May 15, 1998 by the New Mexico Environment Department (NMED). In order to assist the NMED and other interested parties in reviewing these comments, the DOE and WID (collectively referred to as the Permittees) have prepared this Executive Summary to highlight the issues that they believe are the most significant. This summary also explains how the comments are presented and organized. The Permittees are committed to working with the NMED to produce an appropriate permit for the WIPP and appreciate the significant work that went into preparation of the Draft Permit.

In May 1995, the Permittees submitted Revision 5.0 of their Application for a Hazardous Waste Facility Permit for the WIPP. That Revision was the result of extensive discussions with the NMED. In response to the NMED comments and requests, the Permittees subsequently provided additional information in the form of further revisions to the Application. Prior to issuing the Draft Permit, the NMED determined the Application was complete.

1.1 SIGNIFICANT CONCERNS

The Permittees have carefully reviewed the Draft Permit and identified several significant concerns. These concerns involve conditions that, if they are included in the Final Permit, would be inconsistent with RCRA, would adversely affect WIPP's ability to protect public health and the environment, or would burden the operations of the facility. Therefore, the DOE and the WID believe that the following concerns should be addressed in the Final Permit. These concerns are set forth below :

1.1.1 Requirement of a Permit Modification for Each Waste Generator Site (Module II.B.1)

The Draft Permit requires that the Permittees request and obtain a permit modification for each DOE site that intends to ship transuranic mixed wastes to the WIPP. This requirement should be deleted for three RCRA reasons. First, authorizing sites to ship hazardous wastes to a disposal facility such as the WIPP is not one of the situations recognized in the regulations as a basis for modification of a RCRA permit. Second, the modification requirement is legally improper because if it were to appear in the final permit, the Permittees would not be authorized to store or dispose of any hazardous waste at the WIPP until a permit modification was obtained. Finally, the NMED can ensure sites' compliance with the applicable provisions of the Waste Analysis Plan (WAP) through observation and audits.

Further, the requirement also raises several significant policy issues. The extension of NMED's authority to the DOE sites in states other than New Mexico; the *de facto* regulation of hazardous waste characterization in those states via a permit for the

WIPP facility; and the need for commitments of significant resources by both the NMED and the Permittees.

The Draft Permit requires that the Permittees include in their request for a permit modification each site's Quality Assurance Project Plan (QAPjP) and its Standard Operating Procedures (SOPs), which would make the QAPjP and SOPs for every site part of the permit for WIPP. This condition formalizes a significant number of detailed procedures and requires a permit modification for any changes to these procedures. It would also make any deviation from these procedures a potential basis for an enforcement action against the WIPP, the Permittees, or the DOE facilities outside of New Mexico. Such formalization would result in a rigid and cumbersome process that would discourage the Permittees and sites shipping mixed waste to WIPP from improving these procedures. It would also force both the Permittees and the NMED to expend significant resources on permit modifications for changes in procedures that sites could not avoid implementing. This excessive level of detail and procedure in the Draft Permit serves no useful purpose and does not contribute to the protection of human health and the environment. The proposed conditions requiring: (1) a permit modification before sites may ship hazardous waste to WIPP; and (2) the incorporation of sites' detailed operating procedures into the permit are unnecessary and should not be part of the final permit.

1.1.2 Improper Use of Acceptable Knowledge (Module II.C)

The Draft Permit creates an extensive set of requirements for the use of Acceptable Knowledge. See Permit Attachment B4, incorporated by Module II.C.1.e. The DOE uses Acceptable Knowledge for three purposes: (1) to classify waste streams as heterogeneous debris, soils/gravel, or solidified waste (waste stream classification); (2) to determine whether heterogeneous debris waste streams are hazardous waste (hazardous waste determinations); and (3) to characterize waste streams that have been determined to be hazardous waste (mixed waste stream characterization). The DOE uses Acceptable Knowledge to make hazardous waste determinations for heterogeneous waste streams because it is difficult, if not impossible, to obtain representative samples of such waste streams; and even if it were possible to obtain such samples, collecting and analyzing them unnecessarily exposes workers to radiation.

Using Acceptable Knowledge to make hazardous waste determinations is permitted by RCRA and the New Mexico Hazardous Waste Act (HWA) and is encouraged by the Nuclear Regulatory Commission (NRC) and the United States Environmental Protection Agency (EPA). The permit cannot alter the criteria in the RCRA and the HWA regulations for making hazardous waste determinations and should not modify the sampling procedures specified by the EPA for use in making hazardous waste determinations and in characterizing mixed waste. The permit should incorporate the NRC and EPA guidance on the use of Acceptable Knowledge for these purposes. In other words, the provisions in the Draft Permit regarding waste stream classification and mixed waste characterization should be deleted as permit conditions and interpreted only as guidance for determining whether a waste stream is a hazardous waste.

As to the use of Acceptable Knowledge for mixed waste characterization, it appears that the Draft Permit requires that the Permittees use only Acceptable Knowledge to perform this characterization. In fact, no container of waste is characterized through the use of Acceptable Knowledge alone. The Permittees also use headspace gas analysis and either radiography or visual examination to characterize mixed wastes. The conditions in the Draft Permit concerning Acceptable Knowledge significantly increase: (1) the risk of worker exposure to radiation during unnecessary sampling; and (2) the expense of mixed waste characterization. The proposed requirements will not significantly improve the waste characterization process and will provide no additional protection to human health or the environment. In light of these concerns about the provisions in the Draft Permit concerning the use of Acceptable Knowledge, the Permittees request that NMED revise these provisions as suggested in these comments.

1.1.3 Exclusion of Remote Handled Transuranic Mixed Waste (Module II.C.2)

The waste acceptance criteria in the Draft Permit improperly prohibit the disposal of remote handled (RH) transuranic (TRU) mixed waste at WIPP. The only distinction between contact handled (CH) TRU mixed waste and RH TRU mixed waste is the radioactive dose rate at the surface of the waste container. There are no distinctions regarding the types or amounts of hazardous constituents in these two categories of radioactive wastes. It is inappropriate for the Draft Permit to make a distinction between the disposal of CH and RH TRU mixed wastes by allowing the former while prohibiting the latter. Neither RCRA nor the HWA grant NMED the authority to regulate mixed wastes on the basis of differences in the container surface dose rates. Under the WIPP Land Withdrawal Act, the DOE is authorized to dispose of non-mixed RH TRU waste now. Prohibiting the disposal of RH TRU mixed waste will jeopardize the DOE's ability to cleanup the legacy of the Cold War and to fully use WIPP's capacity for disposal of RH TRU waste. The Permittees believe that the provisions in the Draft Permit that prohibit the disposal of RH TRU mixed waste should be deleted.

1.1.4 Requirements Resulting in Excessive Handling of Radioactive Material (Module II.C)

The Draft Permit requires a significant increase in the handling of radioactive mixed wastes. The relevant provisions are inconsistent with the Atomic Energy Act's fundamental objective of reducing radiation exposure to levels As Low As Reasonably Achievable (ALARA). These provisions include:

(1) handling requirements for debris waste which do not comply with the Acceptable Knowledge requirements of Permit Attachment B4 (see Permit Attachment B at p. B-5, incorporated by Module II.C.1.a);

(2) weekly review of process records and resultant sampling (see Permit Attachment B at p. B-15, incorporated by Module II.C.1.a);

(3) requiring a 95 percent Upper Confidence Limit (UCL) instead of a 90 percent UCL (see Permit Attachment B at p. B-10, incorporated by Module II.C.1.a, and Permit Attachment B2 at p. B2-5, incorporated by Module II.C.1.c);

(4) requiring a minimum of 5 samples or 5% of containers in waste stream in order to make preliminary estimates of mean concentration and variance (see Permit Attachment B2 at p. B2-3, incorporated by Module II.C.1.c).

The increased handling of radioactive mixed wastes that the Draft Permit proposes would increase the risk to workers handling the waste and would significantly increase the cost of characterizing waste without any benefit for human health or the environment. Furthermore, the Draft Permit requirements would not alter or improve the way mixed waste is managed at the WIPP facility. The Permittees request that the proposed conditions requiring increased handling of radioactive waste be revised as indicated in these comments.

1.1.5 Unreasonably Low Limits on Volatile Organic Compounds in the Repository (Module IV.D)

In two instances, the NMED has proposed conditions that would set limits on concentrations of volatile organic compounds (VOCs) below what is necessary or appropriate to protect the environment or the health and safety of either the public or site workers. First, the Draft Permit in Module IV.D., lists "room-based" VOC concentration limits applicable to each WIPP Hazardous Waste Disposal Unit (HWDU) at the WIPP facility. It is unclear whether these room-based limits apply to the average in the air in the room, which is impossible to measure, or the average in the headspace of the containers. Second, the Draft Permit only allows underground waste emplacement to continue when the VOC concentrations measured downstream of the open HWDU are below specified Concentrations of Concern. In both cases, the limits are more stringent than necessary and are well below acceptable standards for protecting human health and the environment. The Draft Permit does not explain why such stringent limits are necessary. In their application, the Permittees proposed VOC limits in accordance with , EPA applicable risk-based standards and with standards promulgated by the Occupational Safety and Health Administration (OSHA). The permit should incorporate these standards.

1.1.6 Excessive Corrective Action Requirements (Module VII)

The Draft Permit proposes expansive corrective action requirements to units which have not yet been built, much less received waste, and applies an incorrect residential exposure scenario to evaluate risk at solid waste management units(SWMUs). There is no reason for the permit to designate as "areas of concern" (AOC), those areas of the WIPP which have not received waste and are merely designated for waste emplacement in the future. There is certainly no reason to impose requirements for corrective action and remedial investigation on these areas. A unit is subject to corrective action only if solid waste has been managed

in it. The WIPP units designated for waste in the future - the Waste Handling Building, Parking Area and the, Underground HWDU Panels 1-10 - are not AOCs and should not be subject to corrective action requirements at this time.

The Draft Permit specifies a residential exposure level for assessing risks posed by SWMUs. The WIPP facility would never be used for residential purposes and the Draft Permit fails to provide any basis for applying residential standards to the WIPP. Because it is not realistic to assume residential use, the permit should rely on industrial exposure standards.

1.1.7 Specification of an Improper Point of Compliance for Groundwater Monitoring (Modules V.B and V.C)

The groundwater detection monitoring program (DMP), described in Module V, specifies the point of compliance inside the WIPP waste management area and upgradient of existing, approved detection monitoring well locations. The Draft Permit sets the point of compliance at the outer limit of the HWDUs, which does not include the entire WIPP waste management area. The regulation at 20 NMAC 4.1.500 §264.95 requires that the point of compliance be the downgradient WIPP site boundary in order to take into account the natural barrier that is part of WIPP's waste management area. The geology within the withdrawal lands is part of the barrier system that will contain the waste and is an integral part of the WIPP disposal system. The EPA evaluated and confirmed the efficiency of these natural barriers in its no-migration determination, in which the EPA refused to define the unit boundary as the boundary of the HWDUs. See 55 Fed Reg at 13076. The Final Permit should establish that the point of compliance for the DMP include the natural site barrier which constitutes the WIPP waste management area.

1.1.8 Requirement that the Permittees Provide Liability Coverage and Financial Assurance for Closure/Post Closure (Modules II.N, II.O, II.P, II.Q)

The Draft Permit requires the Permittees to provide liability coverage and financial assurance for closure and post-closure activities at the WIPP facility. This requirement conflicts with 20 NMAC 4.1.500 §264.140(c), which exempts the federal government from the liability and financial assurance requirements of the Hazardous Waste Management Regulations. Because the DOE is the owner of the WIPP facility, there is sufficient assurance of proper closure and monitoring of the facility. See 45 FR 33198-33199 (May 19, 1980). The DOE is clearly exempt from these requirements. In addition, the EPA has interpreted this regulatory language to exempt both the federal government and the government's operating contractor at government-owned facilities. Therefore, the WID is also exempt from these requirements. Finally, the permit may not impose financial requirements on Permittees that are more stringent than the federal requirements. The HWA prohibits the Environmental Improvement Board (EIB) from adopting more stringent regulations for the management of hazardous waste without proper notice and public hearing. See NMSA 1978, § 74-4-4.D. Since the EIB has not imposed more

stringent financial requirements, the Draft Permit's provisions are contrary to the HWA and therefore should be deleted from the permit for the WIPP facility.

1.1.9 Excessive Quality Assurance Requirements (Module All)

The Draft Permit contains excessive quality assurance requirements. Many of the requirements pertaining to quality assurance controls far exceed requirements identified by the EPA for the WIPP and the numerous commercial nuclear facilities under NRC purview. The Permittees and the generator/storage sites have quality assurance programs and controls in place that fully meet or exceed 40 CFR 194, ASME NQA-1, 2, 3;10 CFR 830.120; and DOE Order 5700.6C requirements. These programs have been audited and inspected by the EPA, the DOE-EM, and other organizations and have been determined to be fully adequate.

The additional requirements identified by the NMED will be costly for the DOE and the NMED, and are not necessary to protect human health and the environment. A small sample of the excessive quality assurance requirements applicable to DOE-CAO activities and NMED oversight include, but are not limited to:

(1) Draft Permit Attachment B contains a TRU Waste Site Audit Checklist of over 100 pages. The Draft Permit requires that "The audit checklist developed for each site shall, as a minimum, contain the requirements specified in the checklist found in Table B6-1." The primary content of this checklist reiterates existing QAPP requirements. A relatively minor change to the QAPP could require extensive revision of the audit checklist. Many of the checklist items relate to the verification that procedures are in place. This verification is performed during the adequacy review, conducted prior to the audit. This type of question should not be included in the checklist. In addition, the Permittees' the processes verify on a sample basis that important characteristics are implemented and effective in lieu of the broad approach that treats all QAPP and other requirements as equal. Since the Permittees' existing checklists are very comprehensive, the checklist should be deleted from the Final Permit in Table B6-1.

(2) The Draft Permit requires that Corrective Action Reports (CARs) or Nonconformance Reports (NCRs) be written when any type of deficiency is detected. There are insignificant deficiencies that should not require formal NCRs or CARs. The extensive use of CARs and NCRs should be deleted from the Final Permit and the practices in the DOE's audit and surveillance process incorporated by reference.

(3) Draft Permit Attachment B5 provides excessive requirements for the format of the QAPjP such as data and page number in the upper left hand corner of each page, as well as other details not appropriate for an upper-tier requirements document. This excessive level of detail should be deleted from the Final Permit.

The Permittees and the TRU waste site quality assurance programs address very specific audit, document control, records, training, organizational requirements,

software, and other programmatic processes on a routine basis. The Permittees review generator/storage site processes in terms of each site's standard operating procedures (SOPs). Specifically identifying in the Draft Permit when and why these processes apply, will detract from the proper application of the processes to those areas not specifically identified in the Draft Permit. The Final Permit should only specify that a quality assurance program be implemented and the desired NMED oversight be identified.

1.2 PRESENTATION AND ORGANIZATION OF THE PERMITTEES COMMENTS

Except for general comments about a particular Module or Permit Attachment, each of the Permittees' comments on the Draft Permit is individually numbered and set forth in the following format:

Draft Permit Module or Attachment Text -- sets forth the text of the Module or Permit Attachment to which the comment applies. To facilitate locating the relevant Module or Attachment text, the Module or Attachment number is given, along with page numbers (and line numbers for Attachments). These page and line numbers are taken from the official printed copy of the Draft Permit. The text in this section is set forth in ***bold and italics*** type.

Discussion of the Draft Permit Condition -- sets forth the Permittees' position as to the language or requirements of the Module or Attachment. This is set forth in normal type.

Proposed Revision to Draft Permit Condition -- sets forth the Permittees' proposal for revising the Module or Attachment to reflect the Permittees' comments in the discussion. In order to keep related comments together, all related provisions are set forth and revised when an issue initially arises in the Draft Permit. For example, in Module II.I.2, the Draft Permit requires that copies of the Contingency Plan be maintained at controlled document locations throughout the facility. The DOE recently eliminated most controlled document locations by making controlled documents available to employees on the WIPP computer network. In order to clarify this change, a revision to the condition is proposed. However, the same condition appears in Attachments D and F. In order to keep all of the related changes together, the proposed changes in Attachments D and F are listed with the initial comment in Module II and are not repeated elsewhere in the document. In those cases where several proposed revisions are set forth, each such revision is numbered and no attempt is made to provide all of the original text so as to avoid a significant increase in the length of this comment document. All proposed revisions are set forth in *italics* type.

This Comments document is structured as follows. **Section 1.0** is this Executive Summary. **Section 2.0** presents specific comments on provisions in the Draft Permit on a Module-by-Module, with Sections 2.1 through 2.7 dealing with Draft Permit Modules I through VII respectively. Whenever a Permit Attachment supports a Module, the comments on the Attachment are included as a sub-section. For example, Section 2.1 (dealing with Module I) is divided into Section 2.1.1,

Comments on Module I, and Section 2.1.2, Comments on Attachment A. **Section 3.0** contains many editorial comments which correct typographical errors; clarify text in order to remove ambiguity; or describe more fully and clearly processes the Permittees have implemented at the WIPP facility. In lieu of listing these changes, the Permittees have simply integrated these changes into the redline/strikeout version of the Draft Permit, which is **Section 3.0** of this document. The redline/strikeout version contains all of the Permittees' proposed revisions.

2.0 SPECIFIC COMMENTS

2.1 Module I and Attachments

2.1.1 Comments on Module I

COMMENT 1: DRAFT PERMIT MODULE--GENERAL COMMENT--RECORDS RETENTION

A. Discussion

There are numerous conditions in the Draft Permit pertaining to records which need clarification since the DOE has stringent records retention requirements that must also be accommodated. Specifically, the Draft Permit should clarify the following points:

- Can copies of original records be maintained at the facility to meet operating record and other records retention requirements? If so, original records will then be submitted on a routine basis to the DOE central records facility in Carlsbad.

- Are electronic records acceptable, or are hard copies (printouts) necessary for the operating record? For example, are WWIS reports needed, or is electronic access to the database sufficient for waste analysis information?

- Are microfilm records acceptable for inclusion in the operating record?

In addition, the Permittees require the generator/storage sites to retain raw data generated during the waste characterization process for 10 years from the date of record generation and then disposition the records in accordance with Section 1.7 of the QAPP. The Permit should be modified to reflect this practice.

B. Proposed Revisions To Draft Permit Conditions

Add a new condition that clarifies these topics as follows:

1. Module I.D.10.d., Page I-5

I.D.10.d. *Record Types - Records maintained in the operating record may be good quality copies of original records. Records that are not current records in accordance with the Permittees' established records policies may be retained in electronic or microfilm formats, as long as legible copies are readily available to the NMED when requested.*

2. Attachment B, Page B-17, Lines 17 to 18

Revise the following conditions:

- *Raw data shall be reported accurately in a format pre-approved by the Permittees, shall be maintained for ten years from the date of record generation, and shall be traceable.*

3. Attachment B, Page B-27, Lines 24 to 34

An important part of the Permittees' verification process is the Permittees Audit and Surveillance Program implemented by representatives of the Permittees. This audit program focuses on compliance with the WAP and the Permit. The Permittees will perform the RCRA compliance portion of the audits. This audit program addresses all waste sampling and analysis activities, from waste stream classification assignment through final loading of the TRUPACT-II, and ensures that SOPs are being followed and the WAP is implemented. Audits verify operator qualifications and survey QA/QC procedures. Results of generator site audits will be provided to NMED, and will be kept in the WIPP facility operating record for 10 years.

4. Attachment B, Page B-32, Lines 25 to 27

- *Audit reports and corrective action reports from Permittees Audit and Surveillance Program audits as specified in Section B-4b(1)(iii) and Permit Attachment B6 (retained for 10 years)*

5. Attachment B6, Page B6-1, Lines 26 to 33

Audit procedures shall incorporate the applicable requirements (e.g., auditor and technical specialist qualifications, lead auditor certification). Audit procedures will further establish the responsibilities and methodology for planning, scheduling, performing, reporting, verifying, and closing announced and unannounced audits of TRU mixed waste sites. Records of all audit activities shall be part of the WIPP Operating Record. NMED shall be provided unlimited access to these records.

6. Attachment B6, Page B6-2, Lines 14 to 15

- *Assure records are entered into the WIPP Operating Record*

COMMENT 2: DRAFT PERMIT MODULE I.C.5, PAGE I-2

A. Draft Permit Module Text

"TRU Mixed Waste" means transuranic mixed waste containing more than 100 nanocuries of alpha-emitting transuranic isotopes per gram of waste, with half-lives greater than 20 years, except for (A) high-level radioactive waste; (B) waste that the DOE Secretary has determined, with the concurrence of the EPA Administrator, does not need the degree of isolation required by the disposal regulations; or (C) waste that the Nuclear Regulatory Commission has approved for disposal on a case-by-case basis in accordance with part 61 of title 10, Code of Federal Regulations. [Pub. L. 102-579 (1992)]

B. Discussion of Draft Permit Condition

This definition is incorrect because it uses the definition of TRU waste to create a definition of TRU mixed waste. RCRA does not apply to non-mixed TRU waste; therefore, this definition would extend the permit beyond permissible statutory limits. The Permittees believe the confusion can be avoided by using the accepted definition of TRU waste to create a separate definition of TRU mixed waste.

C. Proposed Revision to Draft Permit Condition

1. Module I.C.5., Page I-2

"TRU Waste" means waste containing more than 100 nanocuries of alpha-emitting transuranic isotopes per gram of waste, with half-lives greater than 20 years, except for (A) high-level radioactive waste; (B) waste that the DOE Secretary has determined, with the concurrence of the EPA Administrator, does not need the degree of isolation required by the disposal regulations; or (C) waste that the Nuclear Regulatory Commission has approved for disposal on a case-by-case basis in accordance with part 61 of title 10, Code of Federal Regulations. [Pub. L. 102-579 (1992)]

Add the following definition:

"TRU Mixed Waste" means TRU waste that is also a hazardous waste as defined by 20 NMAC 4.1.200 (incorporating 40 CFR § 261.3)

COMMENT 3: DRAFT PERMIT MODULE I.D.11, I.D.12, AND I.D.13, PAGE I-6

A. Draft Permit Module Text

I.D.11 Reporting Planned Changes

The Permittees shall give notice to the Secretary, as soon as possible, of any planned physical alterations or additions to the permitted facility. [20 NMAC 4.1.900 (incorporating 40 CFR §270.30(l)(1))]

I.D.12 Reporting Anticipated Noncompliance

The Permittees shall give advance notice to the Secretary of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. [20 NMAC 4.1.900 (incorporating 40 CFR §270.30(l)(2))]

I.D.13 Certification of Construction or Modification

The Permittees shall not store or dispose TRU mixed waste in any modified portion of the facility (except as provided in 20 NMAC 4.1.900 (incorporating 40 CFR §270.42)) until the following conditions specified in 20 NMAC 4.1.900 (incorporating 40 CFR §270.30(l)(2)) are satisfied:

I.D.13.a Submittal of statement - the Permittees shall submit to the Secretary, by certified mail or hand delivery, a letter signed by the Permittees and a New Mexico registered professional engineer stating that the facility has been constructed or modified in compliance with this Permit, and:

I.D.13.b Inspection by the Secretary - the Secretary has:

i inspected the modified portion of the facility and finds it is in compliance with the conditions of this Permit; or

ii waived the inspection or, within fifteen (15) calendar days of the date of submission of the letter required by Permit Condition ?, has not notified the Permittees of his intent to inspect.

B. Discussion of Draft Permit Condition

These conditions should be combined into a single condition. These conditions mirror standard conditions in 20 NMAC 4.1.900, §§ 270.30(l)(1) and (l)(2)(I) and (ii). However, the NMED has separated these into three conditions whereas in the regulations the language set forth in condition I.D.12 is an integral part of I.D.13. The requirements in I.D.12 apply to activities that are outside the permit (for example, mine Panel 5). These

activities would be subject to the conditions in I.D.13 if the two conditions were combined, as in the regulations. Without combining these conditions, all construction and modification activities are subject to I.D.13 whether or not they are in the Permit. For example, maintaining the underground is a continuous construction and/or modification activity, under I.D.13, each such maintenance action must be reported and inspected, even though it poses no risk of permit noncompliance.

C. Proposed Revision to Draft Permit Condition

Combine conditions I.D.11, I.D.12, and I.D.13 to parallel the regulations as follows:

1. Module I.D.11, Page I-6

I.D.11 Reporting Requirements

I.D.11.a. *Reporting Planned Changes*

The Permittees shall give notice to the Secretary, as soon as possible, of any planned physical alterations or additions to the permitted facility. [20 NMAC 4.1.900 (incorporating 40 CFR § 270.30(l)(1))]

I.D.11.b. *Reporting Anticipated Noncompliance*

The Permittees shall give advance notice to the Secretary of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. The Permittees shall not store or dispose TRU mixed waste in any modified portion of the facility (except as provided in 20 NMAC 4.1.900 (incorporating 40 CFR § 270.42)) until the following conditions specified in 20 NMAC 4.1.900 (incorporating 40 CFR § 270.30(l)(2)) are satisfied:

I.D.11.b.i *Submittal of statement - the Permittees have submitted to the Secretary, by certified mail or hand delivery, a letter signed by the Permittees and a New Mexico registered professional engineer stating that the facility has been constructed or modified in compliance with this Permit, and:*

I.D.11.b.ii *Inspection by the Secretary - the Secretary has:*

(a) inspected the modified portion of the facility and finds it is in compliance with the conditions of this Permit; or

(b) waived the inspection or, within fifteen (15) calendar days of the date of submission of the letter required by this permit condition has not notified the Permittees of his intent to inspect.

2.1.2 Comments on Attachment A

There are no specific comments on this attachment, however, there are editorial comments, and comments that modify, clarify, or supplement the text in the Redline/Strikeout version of the Draft Permit.

2.2 Module II and Attachments

2.2.1 Module II Comments

COMMENT 4: DRAFT PERMIT MODULE II.B.1, PAGE II-1

A. Draft Permit Module Text

The Permittees may receive off-site TRU mixed waste in compliance with the requirements and conditions specified in this Permit. The Permittees may only receive TRU mixed waste from those sites approved by the Secretary, through a modification to this Permit, as meeting the characterization requirements of the Waste Analysis Plan (WAP) specified in Permit Condition II.C.1 and Permit Attachment B, as required by 20 NMAC 4.1.500 (incorporating 40 CFR 264.13(a)).

B. Discussion of Draft Permit Condition

The requirement that the Permittees must apply for and obtain a permit modification for each generator/storage site sending TRU waste to the WIPP is inappropriate and unnecessary. This permit modification requirement is improper for the following reasons:

(1) The permit modification requirement would render the final permit ineffective under RCRA. As currently written, the Draft Permit's requirement of a permit modification for approving generator/storage sites creates a sequential process in which the Draft Permit must be issued as a final permit before a permit modification can be sought to add a generator/storage site. This sequencing is a result of the wording in Module II.B.I. The Permittees' modification application must show the generator/storage site's compliance with the WAP in Permit Attachment B; such compliance cannot be shown until Attachment B is finalized. As a result, there will be some period of time in which the Permittees have a "final" permit (in the sense that the Secretary issues a permit under 20 NMAC 4.1.901(a)(9-10) after the hearing process is complete) but will be unable to store and dispose of waste at WIPP. In effect, the "final" permit is nothing more than a right to apply for another permit for storage and disposal of mixed waste from DOE sites. Such a "final" permit violates regulations applicable to this permit proceeding. In 20 NMAC 4.1.900 § 270.2, "Permit" is defined as follows:

> Permit means an authorization, license, or equivalent control document issued by the EPA or an approved State to implement the requirements of this part and Parts 271 and 124. Permit does not include RCRA interim status (subpart G of this Part), or any permit which has not been the subject of final agency action, such as a Draft Permit or a proposed permit.

The key feature of this definition is that a permit allows the permittee to "implement the requirements" of the regulations. It authorizes actions by the permittee which are governed by the regulations and, being the subject of final

agency action, requires no further action by the permitting authority.

Under the terms of the Draft Permit, however, the Permittees could not fully implement the regulations because, the final Permit will not allow the DOE and the WID to store or dispose of any mixed waste. Further, making the Draft Permit "final" would not be final agency action because further action (approval of the generator/storage sites) would still be required before the DOE and the WID could take any action governed by the regulations. Thus, the Draft Permit, if allowed to become final, would not satisfy the requirements of 20 NMAC 4.1.900 § 270.2 because it would not allow for full implementation of the regulations and will not be final agency action.

(2) It appears that the purpose behind Module II.B.1 is to ensure that these sites will comply with the applicable requirements of the WAP concerning waste characterization. This goal can be achieved without the permit modification. Restricting the Permittees to the receipt of waste from sites meeting the applicable WAP gives the NMED enforcement control over the Permittees. The QA program and associated SOPs required of generator/storage sites and enforced through the audit and surveillance program create strong controls over generator/storage site actions. Moreover, the NMED may elect to participate in the initial and annual audits of generator/storage sites as a means to access to the information needed to independently confirm that the generator/storage sites are complying with applicable WAP requirements. This more reasonable approach achieves the goals behind Module II.B.1 while avoiding the legal and logistical problems in the Draft Permit.

(3) There is no regulatory support for requiring a permit modification to add sources of waste. The regulations governing permit modification are set forth in 20 NMAC 4.1.900 (incorporating 40 CFR § 270.41 and § 270.42). 20 NMAC 4.1.900 § 270.41(a) sets forth the situations under which the regulatory agency may modify a permit for cause. Adding a generator/storage site is not listed. 20 NMAC 4.1.900 § 270.42 specifies reasons for modifying a permit at the request of the Permittee, with a list in Appendix I of § 270.42. Adding a generator/storage site is not listed in Appendix I, and such an addition does not fit under any of the listed modifications. 20 NMAC 4.1.500 § 264.13, which Module II.B.1 cites, does not support a requirement that generators must be added through a permit modification. There is no regulatory support for a requirement that generators must be added to a disposal facility's permit through a permit modification. The permittees are not aware of any other storage or disposal facility in the United States that is subject to such a permit condition. The unprecedented requirement of Module II.B.1 is therefore without regulatory support.

(4) The permit modification requirement will impose significant costs on the NMED and the Permittees. The Draft Permit does not make clear the type or class of modification required by Module II.B.1. 20 NMAC 4.1.900 § 270.42 identifies three classes of modifications. Given the extensive documentation required by the Draft Permit for a modification to add a site, it is unlikely that a Module II.B.1

modification falls within Class 1. Class 2 modifications require an extensive comment period an public meeting. Class 3 modifications require public comment, a public meeting, and NMED's response to all public comments within 60 days. In addition, a public hearing may be required. See NMSA, 1978 § 74-4-4.2 (H) and (I). These procedures will require significant commitments of time and resources by both the NMED and the Permittees on each of the modifications needed for the twenty three generator/storage sites.

C. Proposed Revision to Draft Permit Condition

1. Module II.B.1., Page II-1

*The Permittees may receive off-site TRU mixed waste in compliance with the requirements and conditions specified in this Permit. The Permittees may only receive TRU mixed waste from those sites meeting the applicable requirements of the Waste Analysis Plan (**WAP**) specified in Permit Condition II.C.1 and Permit Attachment B, as required by 20 NMAC 4.1.500 (incorporating 40 CFR § 264.13(a)).*

2. Module II.C.1., Page II-1

The Permittees shall not store, dispose, or otherwise manage TRU mixed waste at the WIPP which fails to meet the characterization requirements of 20 NMAC 4.1.500 (incorporating 40 CFR § 264.13), as specified by this Permit.

COMMENT 5: DRAFT PERMIT MODULE II.C.1.f, PAGE II-2 AND II-3

A. Draft Permit Module Text

- the Permittees shall submit, as part of the Permit modification specified in Permit Condition II.B.1, a quality assurance project plan (QAPjP) and standard operating procedures (SOPs) for generator/storage sites which demonstrate compliance with, and implementation of, the WAP, Permit Attachment B, as specified in Permit Attachment B5 (Quality Assurance Project Plan Requirements).

B. Discussion of Draft Permit Condition

This condition specifies that a generator/storage site's QAPjP and SOPs will become part of a modified hazardous waste facility permit once the NMED has acted on the permit modification request involving a particular generator/storage site. If this condition remains in II.C.1.f makes each QAPjP and all SOPs part of the Final Permit, several unreasonable consequences will occur:

(1) The permit will stifle improvement and beneficial change by freezing SOPs in place. Sites improve and change processes frequently to accommodate safer, more efficient, and less expensive ways to accomplish program goals. If, however, the SOPs become part of the WIPP permit, no change to an SOP at a generator/storage site could be made without a permit modification. TRU waste site operations at 23 generator/storage sites would be severely restrained without any tangible benefit to protection of human health or the environment.

(2) The permit will control procedures at sites throughout the country. Requiring continual approval of generator's SOPs through the permit modification process would require the NMED to become familiar with very specific processes at generator/storage sites throughout the country in order to be able to assess the stream of permit modification requests as sites seek to change SOPs . The NMED would incur large and unnecessary costs trying to manage these changes, and the DOE would likewise incur similar costs in preparing the permit modifications necessary to update the SOP sections of the permit.

(3) The permit itself will become unwieldy. The large volume of QAPjPs and SOPs, coupled with the likely large volume of permit modifications to reflect changes in SOPs, will result in a huge permit document that will be extremely difficult to maintain. The Permittees estimate that there will be over 20 QAPjPs under continuous revision. In addition, there will be over 2000 SOPs of which 700 to 800 will be revised annually.

The NMED's participation in audits and surveillance of generator/storage sites, will provide the NMED with sufficient confidence that each generator/storage site will meet the goals of the WAP.

C. <u>Proposed Revision the Draft Permit Condition</u>

1. Module II.C.1.f, Page II-2 and II-3

-the Permittees shall provide the NMED with a reference copy of the generator site's QAPjP prior to each site audit in order to establish that the generator site has implemented a waste characterization program that meets the goals of the WAP. The QAPjP's will include the information as specified in Permit Attachment B5 (Quality Assurance Project Plan Requirements).

COMMENT 6: DRAFT PERMIT MODULE II.C.1.g, PAGE II-3

A. Draft Permit Module Text

- the Permittees shall demonstrate to the Secretary that generator/storage sites have implemented and comply with the WAP, Permit Attachment B, by conducting initial and annual audits of the generator/storage sites as specified in Permit Attachment B6 (Waste Isolation Pilot Plant Generator/Storage Site Waste Screening and Acceptance Audit Program). The Permittees shall provide the final audit report and completed checklist specified in Permit Attachment B6 to the Secretary within thirty (30) calendar days of completion of any audit at a generator/storage site.

The Secretary shall participate in such audits as necessary to independently validate the implementation of and compliance with WAP requirements at each generator/storage site. The Permittees shall provide the Secretary with draft audit schedules and notify the Secretary in writing at least thirty (30) calendar days prior to each waste screening and acceptance audit.

The Permittees shall immediately suspend waste acceptance from a generator/storage site and notify the Secretary in writing if either of the following actions result from an audit of a site:

> ***i. If a generator/storage site fails to complete required corrective action resulting from failure to comply with the WAP within thirty calendar (30) days after issuance of the final audit report by the Permittees, or***
>
> ***ii. If audit findings at a generator/storage site indicate any failure to comply with the approved acceptable knowledge procedures in Permit Attachment B4.***

The Permittees shall not resume shipments following suspension of waste acceptance from a generator/storage site by the Permittees until the Secretary has determined that all corrective actions for the generator/storage site have been completed and comply with the WAP, and the Permittees have re-audited the generator/storage site's program and found it complies with the WAP. The Permittees shall describe by letter the Permittees' actions, findings, and all documentation between the Permittees and the generator/storage site relating to resolution of the corrective actions.

B. Discussion of Draft Permit Condition

This condition is overly restrictive in several areas:

(1) It makes compliance with the entire WAP a condition of waste shipment for generator/storage sites. The WAP was formulated to govern the actions of the Permittees, and major portions of the WAP are clearly inapplicable to generator/storage sites. See comment on Module II.C.I.a. This condition, however, makes a generator's failure to comply with any part of the WAP a potential basis for suspending waste shipments. This is inconsistent with the

goals of the HWA, which requires a permit for hazardous waste treatment, storage and disposal facilities, not hazardous waste generators. Imposing all of the WAP requirements on generator/storage sites is clearly outside the scope of the HWA. Generators that do not treat, store or dispose of hazardous waste are regulated through other mechanisms, such as identification numbers, the manifest system and accumulation requirements. Consequently, generators can be liable for the failure to comply with specific generator requirements. A permitted TSDF, however, cannot be held responsible for the acts or omissions of a generator/storage site shipping waste to a TSDF, unless the TSDF violates its permit or the HWA by relying on those acts or omissions.

(2) Even de minimus issues become bases for suspending waste shipments. Under this condition, all deficiencies detected in an audit are a grounds for suspending waste shipments, especially those in the acceptable knowledge process. Not all deficiencies are grounds for invoking the costly and cumbersome process of additional auditing and requests for the Secretary's re-approval. Minor problems that arise in an audit need not result in the suspension of waste shipments. The Permittees need to have the flexibility under the corrective action elements of the Permittees' quality assurance program to determine whether a deficiency represents the potential to endanger human health and the environment or will lead to a noncompliance with the HWA or the permit. The Permittees can then make the appropriate decision with regard to suspending the shipments. Such rationale would be documented in the audit record and be subject to review by the NMED at any time.

(3) The provision requiring immediate suspension for any deficiency in the acceptable knowledge process is unnecessary. As required by the NMED, the Permittees and generator/storage sites have formal quality assurance programs. Corrective action is an important part of these programs. The Permittees have corrective action controls in place, subject to NMED inspection at any time to identify and correct conditions adverse to quality which are related to acceptable knowledge.

C. Proposed Revision to Draft Permit Condition

1. Module II.C.1.g. , Page II-3

Permittees Audit and Surveillance Program - the Permittees shall demonstrate to the Secretary that generator/storage sites have implemented and comply with applicable provisions the WAP, Permit Attachment B, by conducting initial and annual audits of the generator/storage sites as specified in Permit Attachment B6 (Waste Isolation Pilot Plant Permittees Audit and Surveillance Program). The Permittees shall provide the final audit report and completed checklist specified in Permit Attachment B6 to the Secretary within thirty (30) calendar days of completion of any audit at a generator/storage site.

The Secretary may independently validate the implementation of and compliance with the applicable provisions of the WAP at each generator/storage site. The Permittees shall provide the Secretary with draft audit schedules and notify the Secretary in writing at least thirty (30) calendar days prior to each audit. The Secretary may choose to accompany the

Permittees on any audit as appropriate.

The Permittees shall take action to suspend waste shipments from a generator/storage site and document such action in the operating record as well as notify the Secretary in writing if the permittee determines that a condition adverse to quality at a generator /storage site will endanger human health or the environment or will violate the HWA or this permit.

The Permittees shall not resume shipments following suspension of waste shipments from a generator/ storage site by the Permittees until the Permittees have determined that all corrective actions for the generator/storage site have been completed and if necessary, the Permittees have re-audited the generator/storage site's program and found it complies with the applicable provisions of the WAP. The Permittees shall describe to the Secretary, by letter the corrective actions taken. Documentation associated with the resolution of the issue will be placed in the operating record.

2. Attachment B4, Page B4-1, Lines 26 to 30, and Page B4-2, Lines 1-5

*The Permittees shall obtain from each Department of Energy (**DOE**) TRU mixed waste generator/storage site (**site**) a logical sequence of acceptable knowledge information that progresses from general facility information (TRU Mixed Waste Management Program Information) to more detailed waste-specific information (TRU Mixed Waste Stream Information). The consistent presentation of acceptable knowledge documentation among sites in auditable records will allow Waste Isolation Pilot Plant (**WIPP**) personnel to verify the completeness and adequacy of acceptable knowledge for TRU mixed waste characterization during the audit process. The Permittees shall implement the acceptable knowledge process as specified in this Permit as to the characterization of mixed wastes. The Secretary may independently validate the implementation of and compliance with the applicable provisions of the WAP at each generator/storage site. The Permittees shall provide the Secretary with draft audit schedules and notify the Secretary in writing at least thirty (30) calendar days prior to each audit. The Secretary or his designated representative may choose to accompany the Permittees on any audit as appropriate. As to determining whether a waste stream is mixed or non-mixed, these provisions should be used as guidance in making those determinations.*

3. Attachment B6, Page B6-1, Lines 2 to 19

*The Waste Isolation Pilot Plant (**WIPP**) Permittees Audit and Surveillance Program shall be designed to accomplish the following: 1) the operators of each generator/storage site (**site**) that plans to ship transuranic (**TRU**) mixed waste to the WIPP facility will sample and analyze the wastes in accordance with the applicable provisions of the WIPP Waste Analysis Plan (**WAP**) (Permit Attachment B), and 2) ensure that the information supplied by each site to satisfy the waste screening and acceptability requirements of Section B-4 of the WAP is being managed properly. The Permittees will conduct these audits and surveillances at each site in accordance with standard operating procedures (**SOPs**). The NMED may validate the implementation of applicable WAP requirements (Permit Attachment B) at each site. The auditing SOP will contain steps for selecting audit personnel, reviewing applicable background information, preparing an audit plan, preparing audit checklists, conducting the audit, developing an audit report, and following up on audit deficiencies. Checklists used in the audit shall be tailored for each site to be audited, based*

*on the approved site quality assurance project plan (**QAPjP**) and it's implementing SOPs, which are the site-specific implementing documents for the applicable provisions of the WAP (Permit Attachments B and B5).*

COMMENT 7: DRAFT PERMIT MODULE II.C.1.h, PAGE II-3

A. Draft Permit Module Text

- the Permittees shall certify that the WWIS database is functional and meets all requirements presented in Section B-4b(1)(i) of the WAP, Permit Attachment B, prior to acceptance of TRU mixed waste from any generator/storage site. In addition, the Permittees shall provide the Secretary with direct, read-only access (via modem or Internet) to the entire WWIS database and all reporting capabilities to allow independent evaluation of all information and data related to the characterization, certification, shipment, and disposal of waste to WIPP.

B. Discussion of Draft Permit Condition

This condition creates several logistical problems for the Permittees:

1. The certification requirement is vague. This condition requires that the Permittees "certify" that the WWIS is "functional." However, nothing in the HWA, RCRA, or the Permit explains the procedures to "certify" or what constitutes a "functional" condition, including how computer outages, hardware and software upgrades, communication line deficiencies or other operational issues impact "functionality." The condition requires certification "prior to acceptance of TRU mixed waste from any generator/storage site." It is unclear whether this means that certification is made once before the first waste is received or is made before each shipment of waste to WIPP.

2. The access requested poses security risks. The condition requires the Permittees to grant access to "the entire WWIS database." The "entire database" includes security information such as passwords, names of authorized users and, proprietary code.

All of the information needed by the NMED to verify that the WIPP is being operated in compliance with the regulations and the permit will be contained in the operating record and be available for review by the NMED.

C. Proposed Revision to Draft Permit Condition

1. Module II.C.1.h, Page II-3

Delete this condition.

2. Attachment B, Page B-25, Lines 7 to 17

All generator/storage sites planning to ship TRU mixed waste to the WIPP will supply the required summarized data to the WWIS. The Permittees will use the WWIS to verify that all of the supplied data meet the edit and limit checks prior to the shipment of any TRU mixed waste to WIPP. The WWIS automatically will notify the generator/storage site if any of the

supplied data fails to meet the requirements of the edit and limit checks via an appropriate error message. The generator/storage site will correct the discrepancy and re-transmit the corrected data prior to acceptance of the data by the WWIS. The Permittees will review data reported for each container of each shipment prior to providing notification to the generator/storage site that the shipment is acceptable. Table B-8 gives a partial listing of the data fields contained in the WWIS that are required as part of this permit.

COMMENT 8: DRAFT PERMIT MODULE II.C.2.a, PAGE II-4

A. Draft Permit Module Text

- liquid waste is not acceptable at WIPP. Waste shall contain as little residual liquid as is reasonably achievable by pouring, pumping and/or aspirating, and internal containers shall contain less than 1 inch or 2.5 centimeters of liquid in the bottom of the container. Total residual liquid in any container may not exceed 1 percent volume of that container.

B. Discussion of Draft Permit Condition

The 1 percent residual liquid requirement is ambiguous. It is important to clarify that the 1 percent criterion applies to the payload container (55-gallon drum or standard waste box) and not to an individual internal container.

C. Proposed Revision to Draft Permit Condition

1. Module II.C.2.a, Page II-4

-liquid waste is not acceptable at WIPP. Waste shall contain as little residual liquid as is reasonably achievable by pouring, pumping and/or aspirating, and internal containers should contain less than 1 inch or 2.5 centimeters of liquid in the bottom of the container. Total residual liquid in any payload container (e.g., 55-gallon drum or standard waste box) may not exceed 1 percent of the volume of that container.

2. Attachment B, Page B-6, Lines 7 to 11

- *liquid waste (waste shall contain as little residual liquid as is reasonably achievable by pouring, pumping and/or aspirating, and internal containers should contain less than 1 inch or 2.5 centimeters of liquid in the bottom of the container. Total residual liquid in any payload container (e.g., 55-gallon drum or standard waste box) may not exceed 1 percent volume of that container)*

3. Attachment B, Page B-7, Lines 3 to 15

Delete this condition.

4. Attachment B6, Page B6-14

- *liquid waste (waste shall contain as little residual liquid as is reasonably achievable by pouring, pumping and/or aspirating, and internal containers should contain less than 1 inch or 2.5 centimeters of liquid in the bottom of the container. Total residual liquid in any payload container (e.g., 55-gallon drum or standard waste box) may not exceed 1 percent volume of that container)*

COMMENT 9: DRAFT PERMIT MODULE II.C.2.h, PAGE II-2

A. Draft Permit Module Text

- remote-handled (RH) TRU mixed waste (waste with a surface dose rate of 200 millirem per hour or greater) is not acceptable at WIPP.

B. Discussion of Draft Permit Condition

This condition prohibiting any disposal of remote-handled (RH) TRU mixed waste at the WIPP is improper and poses serious problems which threaten to frustrate the purpose of WIPP. This condition is improper for the following reasons:

(1) The condition conflicts with the WIPP Land Withdrawal Act. The Land Withdrawal Act, 106 Stat. 4777 (LWA), clearly states that mixed RH TRU waste is to be disposed of at WIPP. See e.g., §7(a). The prohibition in this permit condition therefore prevents the Permittees from disposing of this waste at the WIPP.

(2) The condition is based solely on the radionuclide content of TRU waste which is not subject to regulation under applicable hazardous waste requirements. RH TRU mixed waste contains the same hazardous materials as contact-handled (CH) waste the only distinction between RH TRU waste and CH TRU waste is radionuclide content. Thus, the only basis for exclusion of RH waste is the radionuclide content and associated radiation dose rate of that waste. However, applicable hazardous waste requirements do not authorize regulation of waste based on its radioactivity. This condition is not merely an incidental impact on radioactive waste arising from regulation of hazardous waste, which the court found permissible in United States v. New Mexico, 1992 U.S. Dist. LEXIS 20962 (D.N.M. 1992), aff'd, 32 F.3d 494 (10th Cir. 1994). As the hazardous materials in RH-TRU and CH-TRU wastes are the same, this is the direct regulation of nuclear waste which the US v. New Mexico court indicated was improper. Id. at *13.

(3) The NMED's justification for excluding RH TRU mixed waste no longer applies. During the Application process, the NMED's objection to RH TRU mixed waste was related to the absence of specific waste characterization procedures in the DOE's Methods Manual. However, since the NMED has excluded the Methods Manual from the permit and instead required SW-846 techniques, the reason for prohibiting RH TRU mixed waste no longer exists. Furthermore, if the NMED objects to the waste characterization and acceptance process for RH TRU mixed waste, these concerns should be dealt with specifically in the permit.

(4) The condition creates logistical problems that threaten the WIPP's mission. It is important to the DOE and the nation that the facility be permitted at this time to store and dispose of RH TRU mixed waste.

If RH TRU mixed waste disposal does not begin in the year 2002, the WIPP may lose a major portion of its RH TRU capacity because of the waste emplacement process, thereby preventing the Permittees from using the total capacity for disposal of 500,000 cubic feet

of RH TRU mixed waste at the WIPP. In order to begin disposal operations in the year 2002, the DOE has identified several facility and waste handling process modifications that will make the handling of RH TRU mixed waste safer and more efficient by eliminating the need for the Hot Cell. These modifications are described in the comments for Attachment M1. By excluding the RH TRU mixed waste facilities and waste handling processes from the permit, the NMED is requiring the Permittees to seek a major modification to the permit in order to proceed with the design and implementation of the facility modifications needed for RH TRU mixed waste. Such a delay in the RH TRU mixed waste schedule would jeopardize the DOE's ability to begin disposal of RH TRU mixed waste by 2002 and adversely impact the ability of the WIPP to complete its mission with regard to RH TRU mixed waste.

C. <u>Proposed Revision to Draft Permit Condition</u>

1. Module II.C.2.h, Page II-7

Delete this condition.

2. Attachment A, Page A-2, Lines 2 to 5

*The Waste Isolation Pilot Plant (**WIPP**) is a facility for the management, storage and disposal of transuranic (**TRU**) mixed waste. Only contact-handled (**CH**) TRU mixed waste or remote-handled (**RH**)TRU mixed waste is permitted for storage or disposal at the WIPP facility under this permit.*

3. Attachment B, Page B-2, Lines 6 to 7

Delete this condition.

4. Attachment B, Page B-6, Lines 22 to 23

Delete this condition.

5. Attachment F, Page F-1, Lines 5 to 16

This Contingency Plan was prepared in accordance with the Resource Conservation and Recovery Act (**RCRA**) requirements codified in Title 20 of the New Mexico Administrative Code, Chapter 4.1.500 (20 NMAC 4.1.500, incorporating 40 CFR § 264.50 to § 264.56, "Contingency Plan and Emergency Procedures," and submitted in compliance with 20 NMAC 4.1.900 (incorporating 40 CFR §270.14(b)(7)). The purpose of this document is to define responsibilities, to describe coordination of activities, and to minimize hazards to human health and the environment from fires, explosions, or any sudden or nonsudden release of hazardous waste, or hazardous waste constituents to air, soil, or surface water (20 NMAC 4.1.500 (incorporating 40 CFR § 264.51 [a])). This plan consists of descriptions of processes and emergency responses specific to hazardous substances, transuranic (**TRU**) mixed waste and other hazardous waste handled at the WIPP facility.

COMMENT 10: DRAFT PERMIT MODULE II.C.2.i, PAGE II-5

A. Draft Permit Module Text

***Headspace gas sampling and analysis* - any waste container which has not undergone headspace gas sampling and analysis to determine concentration of VOCs is not acceptable at WIPP.**

B. Discussion of Draft Permit Condition

The current requirement for 100% headspace gas sampling of waste containers is unnecessary for the protection of human health and the environment, is not cost-effective, and unnecessarily increases exposure of workers to radiation and hazardous materials.

Headspace gas sampling is a technique developed by the DOE to characterize radioactive waste, including TRU mixed waste. It provides a method for estimating the type and amount of volatile organic compounds (VOCs) present in mixed waste. Headspace gas analytical results verify the hazardous waste codes for VOCs assigned to a waste stream by acceptable knowledge.

In the past, the DOE performed headspace gas sampling on 100% of containers because of the stringent requirements of the WIPP test phase. These stringent requirements no longer apply, so 100% headspace gas sampling is no longer necessary or justified. Instead, the Permittees propose to require that the generator/storage sites sample headspace gas on a statistically representative portion of the waste containers in each waste stream. The number of containers sampled in each waste stream are calculated using the statistical methods presented in EPA SW-846, Chapter 9, as more fully described in the DOE QAPP. This reduction of headspace sampling frequency is consistent with the hazardous waste regulations at 20 NMAC 4.1.500 § 264.13(a)(1) which requires that the sample used to characterize a waste be representative of the waste and provide information needed to safely manage the waste at the WIPP facility. The methodology in the QAPP, which implements the EPA SW-846 methodology, meets this requirement and therefore, is sufficient to protect human health and the environment. Some waste streams such as thermally treated waste may not need to be sampled at all since there is no possibility of significant amounts of VOCs.

For WWIS reporting purposes, containers that are not sampled will report an appropriate average concentration of VOCs for the waste stream.

C. Proposed Revision to the Draft Permit Condition

1. Module II.C.2.i., Page II-5

Delete entire paragraph.

2. Attachment B, Page B-9, Lines 31 to 3 and Page B-10, Lines 1 to 14

Headspace-gas samples are used to determine the types and concentrations of VOCs in

the void volume of waste containers. Reported headspace VOC concentrations in waste containers received at the WIPP facility will be compared routinely and in accordance with requirements of the Permit to ensure that, on an annual basis, there are no associated adverse worker or public-health impacts. In addition, VOC constituents will be compared to those assigned by acceptable knowledge, and the Permittees will assign additional hazardous waste codes, as warranted.

*Sampling protocols, equipment, and QA/QC methods for headspace-gas sampling are provided in Permit Attachment B1. In accordance with EPA convention, identification of hazardous constituents detected by gas chromatography/mass spectrometry methods that are not on the list of target analytes shall be reported. These compounds (up to 20 for GC/MS and 5 for FTIRS) are reported as tentatively identified compounds (**TICs**) in the batch data report and shall be added to the target analyte list if they are listed in 20 NMAC 4.1.200 (incorporating 40 CFR §261) Appendix VIII or the 20 NMAC 4.1.500 (incorporating 40 CFR §264) Appendix IX and are detected in 25% of the samples from a given waste stream. The headspace gas analysis method Quality Assurance Objectives (**QAOs**) are specified in Permit Attachment B3.*

3. Attachment B, Page B-12, Lines 36 to 41 and Page B-13, Lines 1 to 8

A statistically portion of each mixed waste stream is sampled and analyzed for VOCs in the headspace gas. A statistically selected portion of each homogeneous solids and soil/gravel waste stream is sampled and analyzed for RCRA-regulated total VOCs, SVOCs, and metals (see Permit Attachment B2). Sampling and analysis methods used for waste characterization are discussed in Section B-3a. In the process of performing organic headspace and solid sample analyses, nontarget hazardous constituents may be identified. These compounds will be reported as TICs and if they occur in 25% of the samples from a given waste stream they are added to the target analyte list. TICs which qualify as target analytes and are also listed in 20 NMAC 4.1.500 (incorporating 40 CFR §264) Appendix IX, will be compared with acceptable knowledge data to determine if the TIC is a listed hazardous constituent in the waste. If the TIC cannot be identified as a component of waste packaging materials, the Permittees will add these TICs to the list of hazardous constituents for the waste stream (and assign additional EPA hazardous waste codes, if appropriate).

4. Attachment B, Page B-13, Lines 35-36 and Page B-14, Lines 1-4

Delete entire paragraph.

5. Attachment B, Page B-16, Lines 26-29

Delete entire paragraph.

6. Attachment B, Table B-6, Pages B-44, B-45, B-46, B-47

Replace: *100% gas sampling and analysis* with *Statistical sampling* everywhere it appears in the Table.

7. Attachment B, Figure B-2, Page B-55

Replace *Conduct HSG analysis 100% of containers* with *Conduct HSG analysis on a statistical sample of containers*.

8. Attachment B, Figure B-3, Page B-56

Replace *Conduct HSG analysis 100% of containers* with *Conduct HSG analysis on a statistical sample of containers*.

9. Attachment B4, Page B4-11, Lines 12 to 14

*Headspace-gas sampling and analysis shall be reported for all TRU mixed waste to be sent to the WIPP facility. Headspace-gas data may be used to confirm the presence or absence of volatile organic compounds (**VOCs**) identified using acceptable knowledge for hazardous waste determinations.*

10. Attachment B6, page B6-83

Delete first checklist item on this page.

COMMENT 11: DRAFT PERMIT MODULE II.C.2.l, PAGE II-5

A. Draft Permit Module Text

***Treatment standard* - Any waste container containing mixed wastes restricted from land disposal which have not been treated to treatment standards described in 20 NMAC 4.1.800 (incorporating 40 CFR §268 Subpart D), and which is not accompanied by the notice of exemption required by 20 NMAC 4.1.800 (incorporating 40 CFR §268.7(a)(3), is not acceptable at WIPP.**

B. Discussion of Draft Permit Condition

The WIPP Land Withdrawal Act Amendment exempts waste that has been designated for disposal at the WIPP from the RCRA treatment standards. Therefore, this condition is unnecessary.

C. Proposed Revision to Draft Permit Condition

1. Module II.C.2.l, Page II-5

Delete this condition.

COMMENT 12: DRAFT PERMIT MODULE II.I.2, PAGE II-10

A. Draft Permit Module Text

The Permittees shall maintain copies of the Contingency Plan and all revisions and amendments to the Contingency Plan as required by 20 NMAC 4.1.500 (incorporating 40 CFR §264.53). The Permittees shall submit copies of the current Contingency Plan and all revisions to the Contingency Plan to controlled-document locations throughout the facility, and to the Secretary and all entities with which the Permittees have emergency MOUs or MAAs, as required by 20 NMAC 4.1.500 (incorporating 40 CFR §264.53(b)).

B. Discussion of Draft Permit Condition

The WIPP is converting its controlled documents, including the Contingency Plan, to electronic format and providing general access to all employees through the local area computer network. This process provides more rapid access to current revisions of controlled documents and obviates the need for most on-site controlled document locations which are costly to maintain. The permit should be revised to reflect this change in procedures.

C. Proposed Revision to Draft Permit Condition

1. Module II.I.2, Page II-10

The Permittees shall maintain copies of the Contingency Plan and all revisions and amendments to the Contingency Plan as required by 20 NMAC 4.1.500 (incorporating 40 CFR § 264.53). The Permittees shall make copies of the current Contingency Plan and all revisions to the Contingency Plan available through the WIPP electronic controlled document distribution system or in appropriate controlled-document locations at the facility, and to the Secretary and all entities with which the Permittees have emergency MOUs or MAAs, as required by 20 NMAC 4.1.500 (incorporating 40 CFR § 264.53(b)).

2. Attachment D, Page D-1, Lines 21 to 32

Operational procedures detailing the inspections required under 20 NMAC 4.1.500 (incorporating 40 CFR §§ 264.15(a) and (b)), are maintained in electronic format on the WIPP computer Network or, as appropriate, in controlled document locations at the WIPP facility. Frequency of inspections is discussed in detail in Section D-1a(2). Inspections are conducted often enough to identify problems in time to correct them before they pose a threat to human health or the environment and are based on regulatory requirements. The operational procedures assign responsibility for conducting the inspection, the frequency of each inspection, the types of problems to be watched for, what to do if items fail inspection, directions on record keeping, and inspector signature, date, and time. The operational procedures are maintained at the WIPP facility. Table D-1 summarizes inspections, frequencies, responsible organizations, personnel making the inspection (by job title), and the types of anticipated problems. Inspection records are maintained at the WIPP site for three years by the responsible organization shown in Table D-1.

3. Attachment F, Page F-46, Lines 7 to 10

The owner/operator of the WIPP facility will ensure that copies of this Contingency Plan are available through the WIPP electronic controlled document distribution system or in appropriate controlled-document locations throughout the facility and are, consequently, available to all emergency personnel and organizations described in Section F-2. In addition, the owner/operator will make copies available to the following outside agencies:

COMMENT 13: DRAFT PERMIT MODULE II.K.3, PAGE II-11

A. Draft Permit Module Text

The Permittees shall inform the Secretary in writing of changes in management personnel and corresponding telephone numbers within fifteen (15) calendar days of the changes.

B. Discussion of Draft Permit Condition

There is no regulatory basis for this broad notification requirement concerning "management personnel." The regulations specify which management name changes are to be reported to the regulator (such as the RCRA Training Coordinator, the RCRA Emergency Coordinator, the Owner, and the Operator). Requesting information beyond what is required by the regulations creates an unnecessary reporting burden. Finally, this information is of no practical use to the regulator.

C. Proposed Revision to Draft Permit Condition

1. Module II.K.3, Page II-11

Delete this condition.

COMMENT 14: DRAFT PERMIT MODULE II.N.1, PAGE II-13

A. Draft Permit Module Text

The Permittees shall implement financial assurance instruments in the amount of the most recent closure and post-closure cost estimates, prepared in accordance with 20 NMAC 4.1.500 (incorporating 40 CFR §§264.142 and 264.144), as specified in Permit Attachment K.

B. Discussion of Draft Permit Condition

The Draft Permit requires the Permittees to provide liability coverage and financial assurance for closure and post-closure. 20 NMAC 4.1.500 § 264.140(c) clearly exempts the federal government from the closure and post-closure cost estimates and liability requirements as follows: *"States and the Federal government are exempt from the requirement of this subpart." [20 NMAC 4.1.500 § 264.140(c)]*. Since the United States government, i.e., the DOE, is the owner of the WIPP facility, there is sufficient assurance of proper closure of the facility. See 45 FR 33198-33199 (May 19, 1980). Further, the EPA has interpreted liability and financial assurance requirements as exempting both the federal government and the government's operating contractor at government-owned facilities. Therefore, the WID is also exempt from these requirements. The NMED's proposal to impose financial requirements on the Permittees constitutes an attempt to impose more stringent state requirements than the federal requirements. The HWA prohibits adoption of more stringent regulations for the management of hazardous waste without proper notice and a public hearing. See NMSA 1978, § 74-4-4.D. Since the state has not adopted more stringent financial requirements, the Draft Permit's provisions exceed the NMED's statutory and regulatory authority. As such, the liability coverage and the financial assurance requirements contained in the Draft Permit should not be a part of the Final Permit.

C. Proposed Revision to Draft Permit Condition

1. Module II.N.1., Page II-13

Delete this condition.

2. Module II.N.2., Page II-13

Delete this condition.

3. Module II.N.3., Page II-13

Delete this condition.

4. Module II.N.4., Page II-14

Delete this condition.

5. Module II.O.1., Page II-14

Delete this condition.

6. Module II.O.2., Page II-14

Delete this condition.

7. Module II.P.1. , Page II-14

Delete this condition.

8. Module II.P.2. , Page II-14

Delete this condition.

9. Module II.Q., Page II-15

Delete this condition.

10. Module VI.E.1., Page VI-4

Delete this condition.

11. Module VI.E.2., Page VI-4

Delete this condition.

2.2.2 Comments on Draft Permit Attachments B, B1, B2, B3, B4, B5, and B6

COMMENT 15: DRAFT PERMIT ATTACHMENT B--GENERAL COMMENT--UPPER CONFIDENCE LIMITS

A. Discussion

Ninety percent confidence provides a high level of certainty that decisions concerning whether to apply a hazardous waste code are made correctly through unbiased sampling and analysis. The 10% error rate is justified because a lower error rate or higher confidence level provides no benefit in terms of protection of human health or the environment. Use of a 90 percent confidence level does not create unsafe conditions in handling, storage, or disposal. Significantly increased sampling requirements that would result from the change from UCL_{90} to UCL_{95} will increase the potential for worker exposure to chemicals and radionuclides with no added benefit to hazardous waste compliance or safety conditions. The use of a UCL_{95} has no basis or precedent under the hazardous waste requirements and the use of a UCL_{90} is consistent with examples and tabulated values in SW-846. Implementation of the characterization program ensures that the specified confidence will be met at a minimum because of evaluation methodologies and QA/QC requirements.

. The permit cannot alter the regulatory criteria in 20 NMAC 4.1.300 40 Part 262 applicable to hazardous waste determinations, and should not modify the sampling and analysis procedures specified in EPA's SW-846 Manual for making these determinations. The permit does not apply to non-mixed wastes, and therefore it must carefully distinguish between the use of sampling procedures to further characterize waste streams known to be mixed and use of these procedures to make hazardous waste determinations. The provisions regarding characterization of mixed wastes steams should be interpreted as only guidance for determining whether a waste stream is mixed. In addition, the provisions regarding mixed waste characterization should be consistent with EPA's requirements for and guidance on sampling procedures found in documents such as its SW-846 Manual. The DOE uses the data quality objectives process to establish the confidence for making hazardous waste determinations using sample statistics. The process involves an assessment of the decision error rate that is appropriate in characterizing hazardous waste.

Ninety percent confidence provides a high level of certainty that the hazardous waste characterization has been done correctly through unbiased sampling and analysis. All TRU waste will be handled in the same manner during transportation to and disposal in the WIPP regardless of whether it does or does not contain a particular hazardous waste. All waste will be handled, stored, and disposed of in a manner that meets the requirements for hazardous waste management. Waste will not be segregated on the basis of a hazardous waste characterization or determination for the purpose of handling or disposal. Therefore, safety is not compromised as emergency response personnel will respond in the same manner regardless of whether the waste is hazardous or non-hazardous, or which hazardous waste codes it contains.

The number of homogeneous solids and soil/gravel waste samples that would be required to characterize hazardous waste would increase significantly if confidence levels were increased from 90 to 95 percent. The number of samples would be 60-70 percent more than required using a confidence level of 90 percent; the actual increase depends on the number required initially. The increased sampling will significantly increase the potential for personnel exposures to chemicals and radionuclides.

The use of a UCL_{95} has no basis or precedent under the hazardous waste requirements. The use of a UCL_{90} is consistent with examples and tabulated values for the Student's *t* in SW-846, which uses an 80 percent confidence level for a two-sided interval (equivalent to a 90 percent confidence level for a one-sided interval).

B. <u>Proposed Revision to Draft Permit Condition</u>

1. Attachment B, Page B-10, Lines 21 to 33

*Totals analyses or TCLP for PCBs, VOCs, SVOCs, and regulated metals may be used to determine waste parameters in soils/gravels and solids (Tables B-4 and B-5). The generator will use the results from these analyses to determine if a waste exhibits a toxicity characteristic. The mean concentration of toxicity characteristic contaminants are calculated for each waste stream such that it can be reported with an upper 90 percent confidence limit (**UCL_{90}**). The UCL_{90} values for the mean measured contaminant concentrations in a waste stream will be compared to the specified regulatory levels in 20 NMAC 4.1.300 (incorporating 40 CFR §262), expressed as total values, to determine if the waste stream exhibits a toxicity characteristic.*

2. Attachment B, Page B-18, Lines 8 to 18

– *To compare UCL_{90} values for the mean measured contaminant concentrations in a waste stream with specified toxicity characteristic levels in 20 NMAC 4.1.200 (incorporating 40 CFR §261), to determine if the waste is hazardous, and to confirm hazardous waste identification by acceptable knowledge.*

– *To report the average concentration of hazardous constituents in a waste stream, as specified in 20 NMAC 2.1.200 (incorporating 40 CFR §261) Appendix VIII, with a 90 percent confidence interval, with all averages greater than PRQL considered a detection and subsequent assignment of the waste as a hazardous waste, and to confirm hazardous waste identification by acceptable knowledge.*

3. Attachment B2, Page B2-4, Lines 18 to 21

n_0 = the initial number of samples used to calculate the preliminary sample estimate.
n = the calculated number of samples in the preliminary estimate.
t^2 = the 90th percentile for a t distribution with n_0-1 degrees of freedom.
RT = Regulatory Threshold of the contaminant

4. Attachment B2, Page B2-5, Lines 23 to 32 and Page B2-6, Lines 1 to 9

Upon completion of the required sampling, final mean and variance estimates and the UCL_{90} for the mean concentration for each contaminant shall be determined. The observed sample n shall be checked against the preliminary estimate for the number of samples (n, from n_o or n above) to be collected before proceeding, where n* is:*

(B2-8)

$$n^* = \frac{t^2_{\alpha,n^*-1} s_n^2}{\bar{x}_n^2}$$

with Equation B2-8 applied as appropriate. If the observed sample n estimate results in greater than 20 percent more required samples than were originally calculated, then the additional samples required to fulfill the revised sample estimate shall be collected and analyzed. The determination of n* is an iterative process that continues until the difference between n* and the previous sample determination is less than 20 percent.*

Once sufficient sampling and analysis has occurred, the characterization of the waste stream will proceed. The characterization will be made with 90 percent confidence. The UCL_{90} for the mean concentration of each contaminant will be calculated in accordance with the following equation:

$$UCL_{90} = \bar{x} + \frac{t_{\alpha,n-1} s}{\sqrt{n}} \qquad \text{(B2-9)}$$

If the UCL_{90} for the mean concentration is less than the regulatory threshold limit, the waste stream will not be assigned a hazardous code for this contaminant. If the UCL_{90} is greater than or equal to the regulatory threshold limit, the waste stream will be assigned the hazardous code for this contaminant.

5. Attachment B2, Figure B2-1, Page B2-12

Change “95" to “90" in three locations in this Figure.

6. Attachment B3, Page B3-25, Lines 21 to 32 and Page B3-26, Lines 1 to 12

- *Mean concentrations, UCL_{90} for the mean concentrations, standard deviations, and number of samples collected for VOCs, SVOCs, and metals in the waste stream*
- *Whether the mixed waste stream exhibits a toxicity characteristic (**TC**) under 40 CFR Part 261, Subpart C*
- *Whether a sufficient number of waste containers have been visually examined to determine with a reasonable level of certainty that the UCL_{90} for the miscertification rate is less than 14 percent*

If the Site Project Manager determines that insufficient data have been collected to make the characterizations listed above, additional data collection efforts must be undertaken.

*The statistical procedure presented in Permit Attachment B2 shall be used by participating Site Project Managers to evaluate and report waste characterization data from the analysis of homogenous solids and soil/gravel. The procedure, which calculates UCL_{90} values, shall be used to assess compliance with the DQOs in Section 1.5 as well as with applicable regulations. The procedure must be applied to all laboratory analytical data for total VOCs, total SVOCs, and total metals. For regulatory compliance (40 CFR § 261.24), data from the analysis of the appropriate metals and organic compounds shall be compared to the TC levels expressed as total values. These total values will be considered the regulatory threshold limit (**RTL**) values for the WAP. RTL values are obtained by calculating the weight/weight concentration (in the solid) of a TC analyte that would give the regulatory weight/volume concentration (in the toxicity characteristic leaching procedure (**TCLP**) extract), assuming 100-percent analyte dissolution.*

7. Attachment B4, Page B4-11, Lines 29 to 36

*Sites shall confirm the assignment of hazardous waste codes to spent solvents based on acceptable knowledge (20 NMAC 4.1.200, incorporating 40 CFR §261.31) by evaluating the average concentrations of each VOC detected in container headspace gas and/or solidified waste matrix for each waste stream or waste stream lot using the upper 90 percent confidence limit (**UCL_{90}**). The UCL_{90} for the mean concentration shall be compared to the program required quantitation limit (**PRQL**) for the constituent. If the UCL_{90} for the mean concentration exceeds the PRQL, sites shall reevaluate their acceptable knowledge information and determine the potential source of the constituent.*

8. Attachment B6, Page B6-73, Table B6-1, last question, lines 1 and 2

Do procedures ensure that spent solvent assignments are made by using the UCL_{90} (of mean concentration), and comparing this with the PRQLs? If the UCL_{90} exceeds the PRQL, is acceptable knowledge reevaluated and a new waste stream designated, or is the current waste stream description modified to include the hazardous constituent? (Section B4-3d)

COMMENT 16: DRAFT PERMIT ATTACHMENT B--GENERAL COMMENT--RAW DATA

A. Discussion of Draft Permit Condition

Use of the terms "raw data," "data reports," and "data packages" in the Draft Permit is inconsistent with intended definitions or planned reporting practices. Raw data are considered to be analytical documentation forming the basis for concentrations reported in batch data reports, e.g. spectra. Data packages consist of all characterization results for a group of containers with QA and data validation summaries. This is the data package that may be requested by the Permittee. The Draft Permit refers to data reports as both batch data reports and data packages. To clarify, the term "data report" should be replaced as appropriate in the recommended Draft Permit changes.

There is no need for three separate reviews at the data generation level. It is sufficient if the data is reviewed by a second qualified technical reviewer and the QA reviewer. Combining the technical supervisor and QA review will streamline the review process and will address all data generation level review elements currently required in the Draft Permit.

The process for verifying Waste Stream Profile Forms and evaluating the consistency of waste container data with approved waste stream descriptions needs to be clarified. No raw data, data packages, or batch data reports are routinely used by the Permittees in reviewing and approving the Waste Stream Profile Forms and therefore, are not submitted with Waste Stream Profile Forms unless specifically requested by the Permittees.

Any waste with characterization results which are inconsistent with an approved waste stream profile will be redefined as a separate waste stream and a new Waste Stream Profile Form will be submitted. Waste Stream Profile Form resubmittals may be required if calculation or other errors related to the initial data set are identified.

B. Proposed Revision to Draft Permit Condition

Revise the permit conditions dealing with raw data and data transmittal as follows:

1. Attachment B, Page B-8, Line 9

- *A listing of data packages supporting the characterization*

2. Attachment B, Page B-17, Section 4, lines 8 to 13

The Permittees will assure waste characterization that is done by generator sites sending TRU mixed waste to the WIPP for disposal meets WAP requirements through data validation, usability and reporting controls. Verification steps will be taken at three levels: 1) the data generation level; 2) the site project level; and 3) the WIPP facility level. These levels are shown in Figure B-4 and the validation process and requirements at each level is described in Permit Attachment B3.

3. Attachment B, Page B-17, Lines 19 and 20

- *All data shall receive a technical review by another qualified analyst and a QA reviewer.*

4. Attachment B, Page B-17, Lines 23 to 28

Generator/storage sites will be responsible for data validation and verification of waste characterization for each container and the data shall be certified by release signatures from the Site Project Manager, and the Site Project QA Officer. The Permittees will ensure that audits of generator/storage sites are performed to examine DQOs, QAOs, sample control, and data generation.

5. Attachment B, Page B-20, Lines 12 to 31

A format pre-approved by the Permittees will be used by each generator/storage site for reporting waste characterization data. The data reporting format will include all of the elements required by this WAP for batch data reports (Permit Attachment B3). The Permittees will ensure that all generator/storage site QAPjPs meet the requirements presented in Permit Attachment B5 and are reviewed and approved by the Permittees (Permit Attachment M).

The Permittees shall perform audits of the generator/storage site mixed waste characterization programs to verify compliance with the WAP and that site sampling, data collection, data validation, and reporting practices, as implemented by the site QAPjPs, will meet the DQOs in this WAP (Permittees Audit and Surveillance Program). The primary functions of these audits are to review batch data reports prepared by the generator/storage sites that demonstrate adherence to the applicable provisions of this WAP and assure adherence to the WAP characterization program. These audits ensure that implementation of the QAPjPs meet all applicable provisions of this WAP. Section B-4 and Permit Attachment B6 provide additional information on the audits of the generator/storage sites performed by the Permittees. The Permittees shall provide the results of each audit to NMED.

6. Attachment B, Page B-21, Lines 10 to 33

Data packages will document the analytical results from the required characterization analyses, contain the characterization data, and include documentation of required QA/QC activities associated with the sampling and analyses. Data validation at both the data-generation level and the generator/storage-site project level will be performed before the data are transmitted to the Permittees, if requested. Permit Attachment B3 discusses the data validation process in more detail. NMED may request, through the Permittees, copies of the raw data validated by the generator/storage sites to check the Permittees' audit of the validation process.

*Data for each container will be transmitted by hard copy and/or electronically, provided a hard copy is available on demand, from the data generation level to the generator/storage site TRU mixed waste characterization project level. Transmitted data will include testing, sampling, and analytical data reports and data review checklists including results of Level I validation and verification. Testing, sampling, and analytical data will be reported for each waste container. These data will also be input electronically into the WIPP Waste Information System (**WWIS**). Data will be entered into the WWIS in the exact format*

required by the database [see Section B-4b for WWIS data requirements for the WWIS data dictionary]. Summarized characterization information will also be reported on a waste stream basis. Data packages that support the summarized characterization information will be transmitted by hard copy or electronically to the Permittees when requested. Hard copy or electronic data packages will include site name, program identification, waste container numbers, release signatures from the generator/storage Site Project Manager and Site Project QA Officer, and a concise narrative summarizing the results of the site project-level review. Permit Attachment B3 provides the format requirements for generator/storage site hard copy and/or electronic data reports. The report will briefly describe any problems or other observations (e.g., nonconformance reports).

7. Attachment B, Page B-22, Lines 4 to 22

The first level of data verification by the generator/storage site will confirm that the waste characterization data are properly reported for the characterized TRU mixed waste containers that will be shipped to the WIPP. Data review, validation, and verification procedures used by the generator sites are required to ensure that 100 percent of the data reported is independently technically reviewed to assure that data generation and reduction were conducted in a correctly, calculations have been verified, and all variances from accepted analytical methods appropriate to the waste type being analyzed were documented and approved. Data packages will be reviewed by generator/storage sites for completeness to verify that they include field sampling records, raw analytical data, calculation records, Chain of Custody © of C) documentation where appropriate, calibration records, QA sample results, and that sample holding times and preservation methods were met or exceptions documented. Completed data packages shall also be signed by the QA reviewer. At the second level of verification, the Site Project Manager and the Site Data QA Officer will also ensure that the data are acceptable. Finally, if a data package is requested from the generator/storage site by the permittees, a check for the required data package elements will be performed by the Permittees as the third level of verification to assure that data packages are complete. Figure B-4 shows the components of each level of data verification. Data verification and requirements are discussed in more detail in Permit Attachment B3.

8. Attachment B, Page B-23, Lines 22 to 40 and Page B-24, Lines 1 to 40

The first phase of the waste screening and verification process will occur before TRU mixed waste is shipped to the WIPP facility. Before the Permittees begin the process of accepting TRU mixed waste from a generator/storage site, an initial audit of that site will be conducted as part of the Permittees Audit and Surveillance Program (Permit Attachment B6). The RCRA portion of the generator/storage site audit program will provide on-site verification of characterization procedures, data package preparation, and recordkeeping to ensure that all applicable provisions of the WAP are met. Another portion of the Phase I verification is the waste characterization data review and acceptance by the Permittees as part of the Waste Stream Profile Form approval process. At the WIPP facility, this screening includes verification that all of the required elements of a data package summary report are present (Permit Attachment B3) and that the waste characterization data meet acceptance criteria required for compliance with the WAP.

Once a generator/storage site has prepared a QAPjP which includes the applicable provisions of the WAP, it is submitted to the Permittees for review and approval (see Permit

Attachment B5). Once approved, a copy of the QAPjP is provided to NMED for examination upon request, as specified in Permit Attachment B5. The generator/storage site will implement the QAPjP once it is approved.

When the required waste stream characterization data are collected by a generator/storage site and the initial site audit is completed, the generator/storage Site Project Manager can verify that waste stream characterization meets the applicable provisions of the WAP as a part of the Level 2 data verification (Permit Attachment B3). If the waste characterization does not meet the applicable provisions of the WAP, the mixed waste stream cannot be sent to WIPP until those provisions are met. The generator will then complete a Waste Stream Profile Form and submit it to the Permittees, along with the accompanying waste characterization documentation for that waste stream. All data necessary to check to accuracy of the Waste Profile Form (i.e. raw data used to compile the form) will be transmitted to the Permittees with the Waste Stream Profile Form for verification by the Permittees. Data will be entered into the WWIS and available to the Permittees for checking the accuracy of the Waste Stream Profile Form. The waste Stream Profile form provides notification that the generator considers that the waste stream, identified by the waste stream identification number, has been adequately characterized for disposal. The Permittees will compare EPA hazardous waste code(s) assigned to, and waste materials observed in, containers analyzed subsequent to submittal and approval of the Waste Stream Profile Form with characterization information presented on the relevant Waste Stream Profile Form. If this comparison indicates that analyzed containers have hazardous wastes not present on the Waste Stream Profile Form, or a different Waste Matrix Code applies, the waste will be redefined to a separate waste stream and a new Waste Stream Profile Form submitted (if not already submitted). Refer to Section B-4b(1)(ii) for detail regarding ongoing Waste Stream Profile Form examination.

The Waste Stream Profile Form is provided as Figure B-1. It includes information on the generator/storage site name and EPA identification number, the technical contact for information on that waste stream, the WIPP ID, Summary Category Group, listing of acceptable knowledge documentation used, and waste characterization data package identification numbers associated with that waste stream. The form also requires the date of site certification for that waste stream, procedures used for characterization, and EPA Hazardous Waste Code designations. Upon the Permittees' approval of the TRU mixed waste stream for disposal, the generator may begin shipping waste containers from that waste stream.

As part of the waste characterization data submittal, the generator/storage site will also transmit the data on a container basis via the WWIS. This data submittal can occur at any time as the data are being collected, but will be complete for each container prior to TRU mixed waste shipment. The system will conduct internal limit checks as the data are entered, and the data will be available to the Permittees for review as supporting information for Waste Stream Profile Form review. NMED will have unlimited read-only access to the WWIS. The initial Waste Stream Profile Form check performed by the Permittees will include WWIS data <u>and</u> associated data packages if they were requested.

Once a generator/storage site has prepared a QAPjP that includes applicable WAP requirements, it is submitted to the Permittees for review and approval (see Permit Attachment B5). Once approved, a copy of the QAPjP is provided to NMED for examination

upon request, as specified in Permit Attachment B5. The generator/storage site will implement the QAPjP once it is approved.

When the required waste stream characterization data have been collected by a generator/storage site the generator/storage Site Project Manager can verify that waste stream characterization meets the WAP requirements as a part of the Level 2 data verification (Permit Attachment B3). If the waste characterization does not meet the requirements of the WAP, the waste stream cannot be sent to WIPP until those requirements are met. The generator/storage site will then complete a Waste Stream Profile Form and submit it to the Permittees, along with the accompanying waste characterization documentation for that waste stream. Data will be entered into the WWIS and available to the Permittees for checking the accuracy of the Waste Stream Profile Form. The Waste Stream Profile Form provides notification that the generator/storage site considers that the waste stream identified by the waste stream identification number has been adequately characterized for disposal prior to shipment to WIPP. Permittees will compare EPA hazardous waste code(s) assigned to, and waste materials observed in, containers analyzed subsequent to submittal and approval of the Waste Stream Profile Form with characterization presented on this form. If this comparison indicates that analyzed containers have hazardous wastes not present on the Waste Stream Profile Form, or a different Waste Matrix Code applies, the waste will be redefined to a separate waste stream and a new Waste Stream Profile Form submitted (if not already submitted). Refer to Section B-4b(1)(ii) for detail regarding ongoing Waste Stream Profile Form examination.

The Waste Stream Profile Form is provided as Figure B-1. It includes information on the generator/storage site name and EPA identification number, the technical contact for information on that waste stream, the WIPP ID, Summary Category Group, listing of acceptable knowledge documentation used, and waste characterization data package identification numbers associated with that waste stream. The form also requires the date of TSDF-WAC certification for that waste stream, procedures used for characterization, and EPA Hazardous Waste Code designations. Upon the Permittees' approval of the site characterization and certification program and the TRU mixed waste stream profile form for disposal, the generator/storage site may begin shipping waste containers from that waste stream.

As part of the waste characterization data submittal, the generator/storage site will also transmit the data on a container basis via the WWIS. This data submittal can occur at any time as the data are being collected, but will be complete for each container prior to TRU mixed waste shipment. The system will conduct internal limit checks as the data are entered, and the data will be available to the Permittees for review as supporting information for Waste Stream Profile Form review. NMED will have read-only access to all container data, shipment data, and inventory data in the WWIS. The initial Waste Stream Profile Form check performed by the Permittees will include WWIS data <u>and</u> associated data packages if they were requested.

9. Attachment B, Page B-26, Lines 24-39 and Page B-27, Lines 1-11

The Permittees will examine the Waste Stream Profile Form. The assignment of the waste stream description; Summary Category Groups; the results of waste analyses; the acceptable knowledge results; the methods used for characterization; and appropriate designation of EPA hazardous waste code(s) will be examined. If the Waste Stream Profile

Form is inaccurate, efforts will be made to resolve discrepancies by contacting the generator/storage site. If discrepancies in the waste stream are detected at the generator/storage site, the site will implement a non-conformance program to identify, document, and report discrepancies (Permit Attachment B3). The Waste Stream Profile Form verification checks must be satisfactory in order for the waste stream to be approved for shipment to the WIPP facility. The Waste Stream Profile Form check against waste container data will occur during the initial Waste Stream Profile Form approval process.

10. Attachment B, Page B-27, Lines 12 to 22

The Permittees will verify three different types of data related to the WAP for every container holding TRU mixed waste before a shipment leaves the generator/storage site for the WIPP facility. The three verifications will be performed on data from the following determinations: 1) an assignment of the waste stream's waste description; 2) a determination of ignitability, reactivity, and corrosivity; and 3) a determination of compatibility.

11. Attachment B3, Page B3-19, Lines 10 to 20

Data review, validation, and verification at this level involves scrutiny and signature release from qualified independent technical reviewer(s), technical supervisors(s), and a QA representative, as specified below. Individuals conducting this data review, validation, and verification must use checklists that address all of the items included in this section. Checklists must contain tables showing the results of sampling, analytical or on-line batch QC samples, if applicable. Checklists must reflect review of all QC samples and data quality objective categories in accordance with criteria established in Tables B3-2 through B3-9, as applicable to the methods validated,. Completed checklists must be forwarded with testing, sampling, analytical and on-line batch data reports to the project level.

12. Attachment B3, Page B3-19, Lines 30 to 31

Add the following bullet between lines 30 and 31:

- *The testing, sampling, or analytical data QA documentation (testing batch, sampling batch, analytical batch or on-line batch) is complete as appropriate for the point of data generation (i.e., radiography, RA, sampling, and analysis).*

13. Attachment B3, Page B3-21, Line 25 to 35 and Page B3-22 Lines 1 to 6

- *One hundred percent of the batch data reports must receive QA representative (or designee) signature release. The QA representative (or designee) signature release must occur as soon as practicably possible after the technical supervisory signature release in order to determine and correct negative quality trends in the sampling or analytical process. However at a minimum, the QA representative (or designee) signature release must be performed before any waste associated with the data reviewed is shipped to the WIPP. This release must ensure the following:*

  - *Independent technical reviews have been performed as evidenced by the appropriate signature releases.*

  - *Sampling and analytical QC checks have been properly performed. QC criteria that were not met are documented.*

  - *QAOs have been met according to the methods outlined in Section B3-11.*

14. Attachment B3, Page B3-22, Lines 13 to 30

- *One hundred percent of the testing, sampling, and analytical batch data reports must have Site Project Manager signature release. The Site Project Manager signature release must occur as soon as practicably possible after the QA Officer signature release in order to determine and correct negative quality trends in the sampling or analytical process. However at a minimum, the Site Project Manager signature release must be performed before any waste associated with the data reviewed is characterized and shipped to the WIPP. This signature release must ensure the following:*

  - *Data generation level independent technical and Site Project Manager review, validation, and verification have been performed as evidenced by the appropriate signature releases.*

  - *Testing, sampling, analytical and on-line batch data review checklists are complete.*

  - *Testing, sampling, analytical and on-line batch data reports are complete and data are properly reported (e.g., data are reported in the correct units, with the correct number of significant figures, and with qualifying flags).*

- *Reconciliation with the DQOs was performed (Section B3-12).*

15. Attachment B3, Page B3-22, Lines 31 to 36 and Page B3-23, Lines 1-18

One hundred percent of the testing, sampling, and analytical batch data reports must receive Site Project QA Officer signature release. The Site Project QA Officer signature release must occur as soon as practicably possible after the Site Project Manager signature release in order to determine and correct negative quality trends in the sampling or analytical process. However at a minimum, the Site Project QA Officer signature release must be performed before any waste associated with the data reviewed is characterized and shipped to the WIPP. This signature release must ensure the following:

– *Testing, sampling, analytical and on-line batch data reports are complete and data are properly reported (e.g., data are reported in the correct units, with the correct number of significant figures, and with qualifying flags).*

- *Sampling batch QC checks (e.g., equipment blanks, field duplicates, field reference standards) were properly performed, and meet the established QAOs.*

- *Testing batch QC checks (e.g., replicate scans, measurement system checks) were properly performed.*

- *Analytical batch QC checks (e.g., laboratory duplicates, laboratory blanks, matrix spikes, matrix spike duplicates, laboratory control samples) were properly performed and meet the established QAOs.*

- *On-line batch QC checks (e.g., field blanks, on-line blanks, on-line duplicates, on-line control samples) were properly performed and meet the established QAOs.*

- *Proper procedures were followed to ensure representative samples of headspace gas and homogenous solids and soil/gravel were taken.*

- *Radiography data are complete and acceptable based on the videotape review of one waste container per testing batch, at a minimum.*

16. Attachment B3, Page B3-25, Lines 15 to 16

Delete the second and third bullets.

17. Attachment B3, Page B3-23, Lines 19 to 24

Delete the bullet on lines 19 to 24.

18. Attachment B3, Page B3-23, Lines 25 to 35

If requested by the Permittees, the Site Project QA Officer (or designee) must prepare a Site Project QA Officer Summary and the Site Project Manager (or designee) must prepare a Data Validation Summary. These reports may be combined to eliminate redundancy. The Site Project QA Officer Summary includes, on a per waste container basis, a validation checklist for each testing, sampling, analytical and on-line batch. Checklists for the Site Project QA Officer Summary must be sufficiently detailed to validate all aspects of a testing, sampling, analytical or on-line batch that affect data quality. The Data Validation Summary provides confirmation that, on a per waste container basis, all data have been validated in accordance with the site QAPjP. The Data Validation Summary must list each testing, sampling, analytical or on-line batch, describe how the validation was performed and whether or not problems were detected, and include a statement indicating that all data are acceptable.

19. Attachment B3, Page B3-24, Lines 10 to 27

The third and final level of data verification occurs at the Permittees' level and must, at a minimum, consist of an inventory check of any requested data packages to verify completeness. The Permittees are responsible for verifying that data packages include the following:

- *Project-level signature releases*
- *List of waste containers being reported in the package*
- *List of testing, sampling, and analytical batch numbers associated with each waste container reported in the package*
- *Data package case narrative*
- *Site Project QA Officer Summary*
- *Data Validation Summary*
- *Complete summarized qualitative and quantitative data for all waste containers with data flags and qualifiers.*

The Permittees must verify that each data package requested is complete and notify the originating site in writing of the acceptance status of the data within two weeks of data package receipt. The Permittees will maintain the data as appropriate for use in the regulatory compliance programs.

20. Attachment B3, Page B3-26, Lines 33 to 36 and Page B3-27, Lines 1 to 20

Data shall be transmitted by hard copy or electronically, provided a hard copy is available on demand, from the data generation level to the project level. Transmitted data shall include all testing, sampling, and analytical batch data reports, and data review checklists. The report forms and checklists used must contain all of the information required by the testing, sampling, and analytical techniques described in Permit Attachments B1 through B6 , as well as the signature releases to document the review, validation, and verification as described in Section B3-10. All testing, sampling, and analytical batch data reports and checklists shall be on approved forms, as provided in site-specific documentation.

QA documentation shall be maintained in either testing, sampling, and analytical facility files, or site project files for those facilities located on site in accordance with applicable document storage requirements.

21. Attachment B6, Page B6-2, Lines 4 and 5

Delete the bullet on lines 4 and 5.

COMMENT 17: DRAFT PERMIT ATTACHMENT B--GENERAL COMMENT--RADIONUCLIDES

A. Discussion

The purpose of delineating waste streams is to have appropriate populations from which to sample in order to identify all appropriate EPA hazardous waste codes for mixed waste streams , in compliance with applicable regulations. The radionuclide content of a waste stream does not affect such identifications. Radionuclide content is established using radioassay for individual containers. Thus, references to radionuclides and isotopic make-up should be deleted from the Draft Permit.

B. Proposed Revision to Draft Permit Condition

1. Attachment B, Page B-2, Line 26-34

Characterization requirements for individual containers of TRU mixed waste are specified on a waste stream basis. A waste stream is defined as waste material generated from a single process or from an activity that is similar in material, physical form, and hazardous constituents. Waste streams are grouped by Waste Matrix Code Groups related to the physical and chemical properties of the waste. Generator/storage sites shall use the characterization techniques described in this WAP to assign appropriate Waste Matrix Code Groups for WIPP disposal. The Waste summary categories are debris, homogeneous solids, and soils and gravels.

2. Attachment B4, Page B4-3, Lines 18 to 21

- *Material inputs or other information that identifies the chemical content of the waste stream and the physical waste form (e.g., glove box materials and chemicals handled during glove box operations, if applicable)*

COMMENT 18: DRAFT PERMIT ATTACHMENT B--GENERAL COMMENT--NQA-1

A. Discussion

10 CFR 830.120 only applies to contractors at DOE nuclear facilities. The Nuclear Regulatory Commission (NRC) NQA-1 applies to nuclear power plants, the high-level nuclear waste program, and other miscellaneous nuclear activities which it regulates. EPA-ORIA imposes NQA-1 on WIPP nuclear activities. NQA-1 is not applicable to a hazardous waste activities. Part 2.7 of NQA-2 has requirements for software QA, not QA auditing. NQA-3's title states that it applies to scientific investigations for site characterization of nuclear waste repositories. Thus, references to the NQA requirements is inappropriate for a hazardous waste facility permit.

B. Proposed Revision to Draft Permit Condition

1. Attachment B6-2, Page B6-1, Lines 26 to 33

Audit procedures shall incorporate the applicable requirements (e.g., auditor and technical specialist qualifications, lead auditor certification). Audit procedures will further establish the responsibilities and methodology for planning, scheduling, performing, reporting, verifying, and closing announced and unannounced audits of TRU mixed waste sites. Records of all audit activities shall be part of the WIPP Operating Record. NMED shall be provided unlimited access to these records.

2. General

Remove all other references to NQA-1 from the Draft Permit.

COMMENT 19: DRAFT PERMIT ATTACHMENT B--GENERAL COMMENT--ORGANIZATIONAL TITLES

A. Discussion

There are numerous locations throughout the Draft Permit where specific WIPP (DOE or WID) organizational titles are given. These should be changed to "the Permittees" throughout this Permit as appropriate to avoid the burden of unnecessary permit modifications in the future. For example, in numerous places the organization "Waste Operations" is used when it would be just as accurate and effective to say "the Permittees." In other cases, where the organizational context is important, such as in inspections and training, the specific titles should be retained. Examples of these changes are given below.

B. Proposed Revision to Draft Permit Condition

1. Attachment B, Page B-8, Lines 19 to 26

The Permittees are responsible for the review of Waste Stream Profile Forms (see Section B-4b and Figure B-1) and data records to verify compliance with the restrictions on TRU mixed wastes for WIPP disposal. The Permittees will review of shipping records (see Section B-4b) to verify that each container has been prepared and characterized in accordance with the applicable provisions of this WAP. Waste characterization data shall confirm the absence of prohibited items specified in Section B-1c.

2. Attachment B, Page B-21, Lines 17 to 33

*Data for each container will be transmitted by hard copy and/or electronically, provided a hard copy is available on demand, from the data generation level to the generator/storage site TRU mixed waste characterization project level. Transmitted data will include testing, sampling, and analytical data reports and data review checklists including results of Level I validation and verification. Testing, sampling, and analytical data will be reported for each waste container. These data will also be input electronically into the WIPP Waste Information System (**WWIS**). Data will be entered into the WWIS in the exact format required by the database [see Section B-4b for WWIS data requirements for the WWIS data dictionary]. Summarized characterization information will also be reported on a waste stream basis. Data packages that support the summarized characterization information will be transmitted by hard copy or electronically to the Permittees when requested. Hard copy or electronic data packages will include site name, program identification, waste container numbers, release signatures from the generator/storage Site Project Manager and Site Project QA Officer, and a concise narrative summarizing the results of the site project-level review. Permit Attachment B3 provides the format requirements for generator/storage site hard copy and/or electronic data reports. The report will briefly describe any problems or other observations (e.g., nonconformance reports).*

3. Attachment B, Page B-22, Lines 4 to 22

The first level of data verification by the generator/storage site will confirm that the waste characterization data are properly reported for the characterized TRU mixed waste containers that will be shipped to the WIPP. Data review, validation, and verification procedures used by the generator sites are required to ensure that 100 percent of the data reported is independently technically reviewed to assure that data generation and reduction were conducted in a correctly, calculations have been verified, and all variances from accepted analytical methods appropriate to the waste type being analyzed were documented and approved. Data packages will be reviewed by generator/storage sites for completeness to verify that they include field sampling records, raw analytical data, calculation records, Chain of Custody © of C) documentation where appropriate, calibration records, QA sample results, and that sample holding times and preservation methods were met or exceptions documented. Completed data packages shall also be signed by the QA reviewer. At the second level of verification, the Site Project Manager and the Site Data QA Officer will also ensure that the data are acceptable. Finally, if a data package is requested from the generator/storage site by the permittees, a check for the required data package elements will be performed by the Permittees as the third level of verification to assure that data packages are complete. Figure B-4 shows the components of each level of data verification. Data verification and requirements are discussed in more detail in Permit Attachment B3.

4. Attachment B, Page B-24, Lines 5 to 23

When the required waste stream characterization data are collected by a generator/storage site and the initial site audit is completed, the generator/storage Site Project Manager can verify that waste stream characterization meets the applicable provisions of the WAP as a part of the Level 2 data verification (Permit Attachment B3). If the waste characterization does not meet the applicable provisions of the WAP, the mixed waste stream cannot be sent to WIPP until those provisions are met. The generator will then complete a Waste Stream Profile Form and submit it to the Permittees, along with the accompanying waste characterization documentation for that waste stream. All data necessary to check to accuracy of the Waste Profile Form (i.e. raw data used to compile the form) will be transmitted to the Permittees with the Waste Stream Profile Form for verification by the Permittees. Data will be entered into the WWIS and available to the Permittees for checking the accuracy of the Waste Stream Profile Form. The waste Stream Profile form provides notification that the generator considers that the waste stream, identified by the waste stream identification number, has been adequately characterized for disposal. The Permittees will compare EPA hazardous waste code(s) assigned to, and waste materials observed in, containers analyzed subsequent to submittal and approval of the Waste Stream Profile Form with characterization information presented on the relevant Waste Stream Profile Form. If this comparison indicates that analyzed containers have hazardous wastes not present on the Waste Stream Profile Form, or a different Waste Matrix Code applies, the waste will be redefined to a separate waste stream and a new Waste Stream Profile Form submitted (if not already submitted). Refer to Section B-4b(1)(ii) for detail regarding ongoing Waste Stream Profile Form examination.

5. Attachment B, Page B-24, Lines 41 to 42 and Page B-25, Lines 1 to 5

If discrepancies arise as a result of the Phase I review, the Permittees will contact the generator site and require the site to provide the necessary additional information to resolve the discrepancy before that mixed waste stream is approved for disposal at the WIPP facility. If the discrepancy, in accordance with the Permittees' QA program, is not resolved, the waste stream will not be approved. The Permittees will not accept the waste stream until this discrepancy is resolved in accordance with this WAP.

6. Attachment B, Page B-26, Lines 11 to 12

Access to the WWIS will be controlled by the Permittees who will control the WWIS users based on approval from management personnel.

7. Attachment B, Page B-26, Lines 24 to 39 and Page B-27, Lines 1 to 3

The Permittees will examine the Waste Stream Profile Form. The assignment of the waste stream description; Summary Category Groups; the results of waste analyses; the acceptable knowledge results; the methods used for characterization; and appropriate designation of EPA hazardous waste code(s) will be examined. If the Waste Stream Profile Form is inaccurate, efforts will be made to resolve discrepancies by contacting the generator/storage site. If discrepancies in the waste stream are detected at the generator/storage site, the site will implement a non-conformance program to identify, document, and report discrepancies (Permit Attachment B3). The Waste Stream Profile Form verification checks must be satisfactory in order for the waste stream to be approved for shipment to the WIPP facility. The Waste Stream Profile Form check against waste container data will occur during the initial Waste Stream Profile Form approval process.

8. Attachment B, Page B-27, Lines 12 to 22

The Permittees will verify three different types of data related to the WAP for every container holding TRU mixed waste before a shipment leaves the generator/storage site for the WIPP facility. The three verifications will be performed on data from the following determinations: 1) an assignment of the waste stream's waste description; 2) a determination of ignitability, reactivity, and corrosivity; and 3) a determination of compatibility.

9. Attachment B, Page B-27, Lines 24 to 34

An important part of the Permittees' verification process is the Permittees Audit and Surveillance Program implemented by representatives of the Permittees. This audit program focuses on compliance with the WAP and the Permit. The Permittees will perform the RCRA compliance portion of the audits. This audit program addresses all waste sampling and analysis activities, from waste stream classification assignment through final loading of the TRUPACT-II, and ensures that SOPs are being followed and the WAP is implemented. Audits verify operator qualifications and survey QA/QC procedures. Results of generator site audits will be provided to NMED, and will be kept in the WIPP facility operating record for 10 years.

10. Attachment B, Page B-29, Lines 6 to 8

The Permittees will verify each approved shipment upon arrival at the WIPP against the data on the WWIS shipment summary report to ensure that only preapproved containers are accepted. Checklists are used to document this verification.

11. Attachment B, Page B-29, Lines 11 to 16

Upon receipt of a TRU mixed waste shipment, the Permittees will determine if the EPA Uniform Hazardous Waste Manifest is complete and sign the manifest to allow the driver to depart. The Permittees will then determine if the waste shipment is complete by checking the unique, bar-coded identification number found on each container holding TRU mixed waste against the WWIS database.

12. Attachment B, Page B-30, Lines 17 to 24

If the Permittees return a mixed waste container to the generator/storage site, the Permittees will delete the data for that container from the WWIS. The reason for the WWIS data deletion will be recorded on the change log, which will provide an auditable record of the returned shipment.

The Permittees will resolve discrepancies, notify the NMED, and return the original copy of the manifest to the generator.

13. Attachment B, Page B-30, Lines 36 to 37

The Permittees will determine whether there are TRU mixed waste shipment irregularities. The following items will be noted for each TRU mixed waste shipment arriving at the WIPP facility:

14. Attachment B, Page B-31, Lines 2 to 16

*The Permittees will verify that the mixed waste containers, as identified by their container ID numbers, are the containers for which accepted data already exists in the WWIS. The Permittees compare the data on the WWIS Shipment Summary Report for the shipment to the actual shipping papers, including the EPA Hazardous Waste Manifest. This check also verifies that the containers included in the shipment are those for which approved shipping data already exist in the WWIS Transportation Data Module (Table B-8). For standard waste boxes (**SWBs**) and ten drum overpacks (**TDOPs**), the Permittees will compare the barcode on the container with the shipping papers and the data on the WWIS Shipment Summary Report. For 7-pack assemblies, one of the seven container barcodes will be read by the barcode reader and compared to the assembly information for this container on the WWIS Shipment Summary Report. This will automatically identify the remaining six containers in the assembly. This process enables the Permittees to identify all of the containers in the assembly with minimum radiological exposure. If all of the container IDs and the information on the shipping papers agree with the WWIS Shipment Summary Report, the mixed waste containers will be approved for storage and disposal at the WIPP facility.*

15. Attachment B, Page B-31, Lines 27 to 31

As part of the WIPP facility's operating record, waste characterization data are managed in accordance with standard records management practices. The storage of the Permittees'

copy of the manifest, LDR information, waste characterization data, Waste Stream Profile Forms, and other related records will be identified on the appropriate records inventory and disposition schedule.

16. Attachment B3, Page B3-24, Lines 10 to 27

The third and final level of data verification occurs at the Permittees' level and must, at a minimum, consist of an inventory check of any requested data packages to verify completeness. The Permittees are responsible for verifying that data packages include the following:

- *Project-level signature releases*
- *List of waste containers being reported in the package*
- *List of testing, sampling, and analytical batch numbers associated with each waste container reported in the package*
- *Data package case narrative*
- *Site Project QA Officer Summary*
- *Data Validation Summary*
- *Complete summarized qualitative and quantitative data for all waste containers with data flags and qualifiers.*

The Permittees must verify that each data package requested is complete and notify the originating site in writing of the acceptance status of the data within two weeks of data package receipt. The Permittees will maintain the data as appropriate for use in the regulatory compliance programs.

17. Attachment B3, Page B3-24, Lines 29 to 34

Reconciling the results of mixed waste testing and analysis with the DQOs provides a way to ensure that data will be adequate to support the regulatory compliance programs. Reconciliation with the DQOs will occur at both the project level and the Permittees' level. At the project level, reconciliation will be performed by the Site Project Manager. Reconciliation at the Permittees' level will also be performed.

18. Attachment B3, Page B3-26, Lines 14 to 17

The Permittees must also ensure that data of sufficient type, quality, and quantity are collected to meet WAP DQOs. The Permittees will ensure sufficient data are collected to determine the following:

19. Attachment B6, Page B6-28, 3rd Entry

Are procedures in place to ensure that the generator/storage site reports summarized waste characterization information on a waste stream basis, and transmits the summarized data by hard copy or electronically to the Permittees when requested? (Section B-4a(5))

20. Attachment B6, Page B6-29, 1st Entry

Are procedures in place to ensure that the generator/storage site's site project manager submits the WSPF to the Permittees along with the accompanying waste characterization documentation for that mixed waste stream? (Section B-4a(5))

21. Attachment F, Page F-13, Lines 34 to 37

Off-shift personnel may be notified using the on-call list, which is updated weekly the Permittees. The FSM/CMRO, each individual on the on-call list, and WIPP Security receive copies of the on-call list. The CMRO may direct Security to make the notifications.

22. Attachment F, Page F-19, Lines 20 to 26

*After the materials involved in an emergency are identified, the specific information on the associated hazards, appropriate personal protective equipment (**PPE**), decontamination, etc., will be obtained from MSDSs and from appropriate chemical reference materials at the same location. These information sources may be accessed by the RCRA Emergency Coordinator or through several WIPP facility organizations.*

23. Attachment F, Page F-29, Lines 16 to 25

The WIPP underground is routinely evaluated for stability and safety of the underground openings. These evaluations can be as simple as the MSHA required visual checks by personnel working in the area or as extensive as the expert review of the roof support system for Room 1 Panel 1 conducted in 1991. An in-depth evaluation of all of the accessible underground is performed on an annual basis as part of the formal ground control operating plans. Weekly visual and sounding inspections are performed by the Permittees. More frequent inspections and evaluations are performed in areas where roof or ribs are in need of evaluations, based on visual observations by the Permittees, analysis of rock deformation data, excavation effects program data acquired from observation holes, and support system performance.

24. Attachment G-1, Page G-1, Lines 10 to 20

Rail access is available and may be used for TRU mixed waste transport during the Disposal Phase. Rail access is from the west across the southern access road (marked by railroad crossing signs), but does not cross the northern access road used by the tractor-trailers (Figure G-2). The roadway is raised above the surrounding terrain, ensuring clear visibility of all on-site rail movements. Security opens a locked gate at the West end of the PPA when rail shipments arrive and closes it while the locomotive is on site. The reverse takes place as the locomotive departs. The road crossing will not be blocked for extended periods of time. A railcar mover is used to move railcars into and out of the WHB for waste handling operations when the locomotive is not on site. The alternate truck route to the parking area HWMU at the east end of the WHB will be staffed by the Permittees to protect the crossing during any railcar movements into or out of the WHB.

25. Attachment L, Page L-9, Lines 36 to 38 and Page L-10, Lines 1 to 9

Wells WQSP-1, WQSP-2, and WQSP-3 were located directly upgradient of the WIPP shaft area. The locations of the three upgradient wells were selected to be representative of the flow vectors of ground water moving downgradient onto the WIPP site. Figure 34 of Davies, 1989, shows the simulation of direction and magnitude of ground-water flow. The upgradient wells were located based on the flow vectors resulting from this model simulation. The original WQSP observation wells, as well as those in the RCRA DMP, have been and will continue to be used as piezometer wells to support collection of ground-water surface elevation and ground-water flow modeling data to demonstrate regulatory compliance. Well location surveys for each of the seven wells were performed by the Permittees survey personnel using the State Plane Coordinates-North American Datum Model 27 method. Results of the surveys are on file with the New Mexico State Engineers Department along with the associated extraction permits for each well.

26. Attachment L, Page L-33, Lines 16 to 22

The EM Manager will establish minimum qualification criteria and training requirements for all DMP personnel. The EM Manager will assure that position descriptions for assigned DMP personnel are adequately prepared. The EM Manager and/or Team Leader will assure that training is performed on an individual basis to maintain an acceptable level of proficiency by all new or temporary DMP staff and by all permanent GWSP staff. The EM Manager will assure that documents detailing all staff training are current and properly filed. Copies of training records will be on file for the Permittees.

27. Attachment M1, Page M1-8, Lines 31 to 40

[1]SWPs are prepared to assure that any hazardous work not covered by a procedure is performed with due precaution. SWPs are issued by the Permittees after a job supervisor completes the proper form detailing the job location, work description, personnel involved, specific hazards involved, and protective requirements. The Permittees review the form, check on the adequacy of the protective measures, and if sufficient, approve the work permit. Conditions of the SWPs must be met while any hazardous work is proceeding. Examples of activities covered by the SWP program include confined space entry, overhead work, and work on energized equipment.

[2]RWPs are used to control entry into and performance of work within a controlled area (CA). Managers responsible for radiological work within a CA must generate a work permit that specifies the work scope, limiting conditions, dosimetry, respiratory protection, protective clothing, specific worker qualifications, and radiation safety technician support. RWPs are approved by the Permittees after thorough review. No work can proceed in a CA without a valid RWP.

28. Attachment M2, Page M2-13, Lines 37 to 33 and Page M2-14, Lines 1 to 6

*The Permittees will ensure that HWDUs will be sufficiently supported to assure compliance with the applicable portions of the Land Withdrawal Act (**LWA**), which requires quarterly inspections of the WIPP underground by the Mine Safety and Health Administration (**MSHA**). Creep and rock failure in the WIPP excavations progress slowly. As a result, many years pass before any operationally significant instability could occur. This long period*

allows sufficient time for appropriate action, such as additional monitoring or installing supplementary support. Support is installed to the requirements of 30 CFR §57, Subpart B. The Permittees will include random checks by Quality Assurance/Quality Control personnel as each system is installed. The Permittees perform geotechnical monitoring, design, analysis, and planning while Westinghouse Mine Operations is responsible for daily and regulatory inspections, maintenance, and construction of the underground.

29. Attachment M2, Page M2-19, Lines 29 - 35 & Page M2-20, Lines 1 - 17

Data from remotely read instrumentation will be maintained as part of a geotechnical instrumentation system. The instrumentation system provides for data maintenance, retrieval, and presentation. The Permittees will retrieve the data from the instrumentation system and verify data accuracy by confirming that the measurements were taken in accordance with applicable instructions and equipment calibration is known. Next, the Permittees will review the data after each polling to assess the performance of the instrument and of the excavation. Anomalous data will be investigated to determine the cause (instrumentation problem, error in recording, changing rock conditions). The Permittees will calculate various parameters such as the change between successive readings and deformation rates. This assessment will be reported to the Permittees' cognizant ground control engineer and operations personnel. The Permittees will investigate unexpected deformation to determine if remediation is needed.

The stability of an open panel excavation is generally determined by the rock deformation rate. The excavation may be unstable when there is a continuous increase in the deformation rate that cannot be controlled by the installed support system. The Permittees will evaluate the performance of the excavation. These evaluations assess the effectiveness of the roof support system and estimate the stand-up time of the excavation. If an open panel shows adverse (unstable) conditions, the results will be reported to determine if it is necessary to terminate waste disposal activities in the open panel. This report of the trend toward adverse conditions in an open HWDU will also be provided to the Secretary of the NMED within 5 working days of issuance of the report.

30. Attachment N, Page N-5, Lines 5 to 9

The Permittees will conduct some sampling prior to waste emplacement to assess the monitoring and analytical systems. The Permittees will evaluate whether the monitoring systems and analytical methods are functioning properly. The assessment period will be determined by the Permittees .

31. Attachment N, Page N-11, Lines 27 to 34

Samples will be analyzed at suitable analytical laboratory. If an off-site contract laboratory is used, the Permittees will ensure that procured services conform to specified requirements. These measures generally will include one or more of the following: (1) evaluation of the supplier's capability to provide services in accordance with requirements, including a history of providing similar services; (2) evaluation of objective evidence of conformance, such as laboratory document submittals; and (3) examination of delivered services.

COMMENT 20: DRAFT PERMIT ATTACHMENT B--GENERAL COMMENT -- NONCONFORMANCE REPORTS

A. Discussion of Draft Permit Condition

The Draft Permit conditions requiring the Permittees to document non-conformances are redundant and should be deleted. Non-conformances are deficiencies in a characteristic or record that renders the quality of an item or sample unacceptable or indeterminate to established requirements. Non-conformances can occur at various times in the process of performing work. Non-conformances identified during "In-Process" activities do not normally require non-conformance reporting. If a process is incomplete or otherwise non-conforming, the process may be completed and the non-conformance corrected without documentation in accordance with the performing organization's work procedures. At such time in the process when the work activity is considered completed by the performing organization and the object of the work activity is "Ready" and "Presented" for acceptance for the client or up-line organization, it is then necessary to document any non-conformances identified during the further processing or acceptance activities.

Non-conformances are processed in accordance with the performing organization's own internal procedures. These procedures are written to implement upper-tier requirements, and are subjected to audits and surveillances to assure upper-tier requirements are being met during NCR processing.

Data validation and verification at the generator/storage site level including the independent technical review and QA representative review are considered "In-Process" work activities. The requirement to document non-conformances at this level would be redundant. The purpose of these reviews is to identify and correct potential non-conformances. The project level review is the upline review which requires NCRs for non-conformances. Requiring the Permittees to document non-conformances at the generator/storage site level reviews would add additional cost without providing any additional value or increased protection of human health or the environment. Furthermore, "identifying and tracking" non-conformances developed at the generator/storage site level does not provide or additional public protection.

The Permittees do not want NCR tracking reports from each generator/storage site. The Permittees expect the generator/storage sites to implement their own QA program requirements for tracking until closure of each non-conformance written and then trend those NCRs for quality improvement purposes. The Permittees will verify the implementation of the site QA Programs during audits and surveillances. Documenting NCRs as CARs is redundant.

Discrepancies in Acceptable Knowledge (AK) information at the generator/storage site level are documented and resolved in accordance with the site-specific procedures for assembling and evaluating and confirming AK information. This activity is considered in-process and NCR processing would not be required. The assembling, evaluating and confirming procedures are established to ensure any non-conforming data are identified and the resolution is documented in the auditable AK record. The use of an NCR is redundant and unnecessary for compliance with the WAP requirements.

B. <u>Proposed Revision to Draft Permit Conditions</u>

Make the following revisions to the permit conditions dealing with nonconformances and documentation of NCRs.

1. Attachment B3, Page B3-19, Lines 10-20

Data review, validation, and verification at this level involves scrutiny and signature release from qualified independent technical reviewer(s), technical supervisors(s), and a QA representative, as specified below. Individuals conducting this data review, validation, and verification must use checklists that address all of the items included in this section. Checklists must contain tables showing the results of sampling, analytical or on-line batch QC samples, if applicable. Checklists must reflect review of all QC samples and data quality objective categories in accordance with criteria established in Tables B3-2 through B3-9, as applicable to the methods validated,. Completed checklists must be forwarded with testing, sampling, analytical and on-line batch data reports to the project level.

2. Attachment B3, Page B3-19, Lines 31-36

- *Data generation and reduction were conducted in a technically correct manner in accordance with the methods used. Data were reported in the proper units and correct number of significant figures.*

3. Attachment B3, Page B3-20, Lines 1-5

- *Calculations have been verified by a valid calculation program, a spot check of verified calculation programs, and/or 100 percent check of all hand calculations. Values that are not verifiable to within rounding or significant difference discrepancies must rectify all values prior to completion of independent technical review.*

4. Attachment B3, Page B3-20, Lines 16-20

- *QC sample results are within established control limits, and if not, the data have been appropriately qualified. Data outside of established control limits will be qualified appropriate qualifying flag, discussed in the case narrative and will be included in the calculation for completeness.*

5. Attachment B3, Page B3-21, Lines 4-6

- *Field sampling records are complete. Incomplete or incorrect field sampling records will be subject to resubmittal prior to completion of the independent technical review.*

6. Attachment B3, Page B3-29, Lines 13-21

Nonconformances are uncontrolled and unapproved deviations from an approved plan or procedure. Nonconforming items and activities are those that do not meet the WAP requirements, procurement document criteria, or approved work procedures. Nonconforming items shall be identified by marking, tagging, or segregating, and the affected organization(s) notified. Disposition of nonconforming items shall be identified and documented. The generator sites' implementing procedure shall identify the position responsible for evaluating and dispositioning nonconforming items and shall include referenced procedures for handling them.

7. Attachment B3, Page B3-30, Lines 9-14

The Site Project QA Office shall oversee the nonconformance report process. Documentation of nonconformances shall be made available to the Site Project Manager, who in turn is responsible for notifying project personnel of the nonconformance. Completion of the corrective action for nonconformances must be verified by the Site Project QA Officer.

8. Attachment B4, Page B4-6, Line 11

- *Discrepancy resolution and reporting process*

9. Attachment B4, Page B4-11, Lines 8 to 11

- *If discrepancies exist in the acceptable knowledge information for the reassigned Waste Matrix Code, document the segregation of this container and the resolution of the discrepancies.*

10. Attachment B4, Page B4-16, Lines 14 to 42

*Confirmation of acceptable knowledge characterization designations will be accomplished at the generator/storage site, as stated in Section B4-3(b). In addition and prior to notifying a generator/storage site that a waste stream can be shipped and accepted at the WIPP facility, the Permittees will review the Waste Stream Profile Forms and confirm hazardous waste determinations made using acceptable knowledge. Generator/storage sites shall provide all of the required data associated with waste stream characterization, including radiography or visual examination, headspace gas sampling and analysis, and solidified waste sampling and analysis results. In addition, generator/storage sites will designate the assigned hazardous waste codes for the waste stream on the Waste Stream Profile Form. The data packages will be evaluated as illustrated in Figure B4-2 and compared to the hazardous waste codes specified on the Waste Stream Profile Form. The Permittees will review information provided by the generator/storage sites to ensure that additions to hazardous waste codes are identified and justified based on data and that hazardous waste codes are included in the Part A of the WIPP permit application. As part of the reconciliation of data quality objectives (**DQOs**) (Permit Attachment B3-11), generator/storage sites are required to track and report additions to hazardous waste determinations. If data consistently indicate that discrepancies with acceptable knowledge information were identified at the generator/storage site level and were subsequently reconciled, the Permittees will require generator/storage sites to reassess the materials and processes that*

generate the waste, resubmit waste stream profile information, and implement their corrective action system. If the Permittees' review of a Waste Stream Profile Form and associated waste data reveal nonconformance with acceptable knowledge requirements, the Permittees shall prohibit shipment of the waste stream to WIPP until corrective action is taken as specified in Permit Attachment B3. Consistent repeated nonconformances by a generator/storage site in implementing and documenting the applicable provisions of the WAP (Permit Attachment B) will result in the termination of a generator/storage site's waste characterization and waste certification authority by the Permittees. Waste characterization and certification authority will not be reinstated by the Permittees until the generator/storage site demonstrates all corrective actions have been implemented and the program is reassessed by the Permittees.

COMMENT 21: ATTACHMENT B--GENERAL COMMENT--AGE OF WASTE

A. Discussion

The permit makes a distinction between newly generated and retrievably stored mixed waste. Because all TRU mixed waste must undergo either 100% radiography confirmed by visual examination or 100% visual examination, making a distinction between retrievably stored mixed waste and newly generated mixed waste serves no useful purpose and is confusing. Therefore these distinctions should be deleted throughout the Draft Permit.

B. Proposed Revision to Draft Permit Condition

Delete all text that distinguishes between retrievably stored mixed waste and newly generated waste.

COMMENT 22: DRAFT PERMIT ATTACHMENT B--GENERAL COMMENT--RADIOGRAPHY

A. Discussion

The requirement that the Permittees routinely review radiography tapes does not add to the protection of human health and the environment and is not necessary. Radiography tapes are reviewed by qualified independent technical reviewers at each generator/storage site. These technical reviewers have the necessary site specific training as required by the Draft Permit. The Permittees verify that radiography (if required) was completed for each container using the WWIS prior to approving the container's shipment to the WIPP. In addition, all radiography information, including the tapes and independent technical review records, are subject to the Permittees' audit and surveillance program.

It is not practical or cost-effective for the Permittees to train radiography operators because each generator/storage site has specific training requirements related to it's waste generating processes and waste packaging techniques. The physical characteristics of the waste vary considerably, and require radiography operators to have significant site-specific experience and training.

There is no justification for restricting approved radiography to only real-time radiography (RTR). For example, digital radiography and other more sensitive imaging techniques are now available to some generator/storage sites and these new techniques should be approved for use by the Permittees without the need to modify the Permit.

Attachment B1, Section B1-3b(2) of the Draft Permit describes the independent technical review (verification) that takes place at each generator/storage site, including replicate scans and replicate observations (review of tapes). The oversight functions discussed in the last paragraph of B1-3b(2) of the Draft Permit are unclear and redundant to the QC checks required in the paragraphs immediately preceding. Adequate oversight is already required by independent scans and replicate observations, as well as internal audits and surveillances performed by the generator/storage site. "Periodic tape review" is not defined and can be construed to be the replicate observation of the video output. Therefore, this additional requirement does not add value to the Program.

B. Proposed Revision to Draft Permit Condition

1. Attachment B, Page B-7, Lines 3 to 15

Delete the paragraph.

2. Attachment B, Page B-12, Lines 12 to 15

Delete the paragraph.

3. Attachment B1, Page B1-23, Lines 1 to 6

The site project QA officer shall be responsible for monitoring the quality of the radiography data and calling for corrective action, when necessary.

4. Attachment B6

Change “RTR” to radiography at the following locations in B6

Page B6-31, Entry 1
Page B6-108, Entry 1, Entry 3, Entry 5
Page B6-114, Entry 7
Page B6-115, Entry 3, Entry 4 (2 locations)
Page B6-123, Entry 8

Delete “(RTR)” on Pages B6-105 and B6-107

Delete “real-time” on Page B6- 108, Entry 2

COMMENT 23: DRAFT PERMIT ATTACHMENT B , PAGE B-3, LINES 20 TO 24

A. Draft Permit Attachment Text

Debris means solid material exceeding a 2.36 inch (in.) (60 millimeter) particle size that is intended for disposal and that is:

1. ***a manufactured object, or***
2. ***plant or animal matter, or***
3. ***natural geologic material.***

B. Discussion of Draft Permit Condition

The current definition of the S5000 summary category group is too specific with regard to the definition of debris waste. The selection of a 2.36 inch limit for debris waste is too restrictive and will require the DOE to perform sampling on certain waste forms that are clearly debris, such as rashig rings.

C. Proposed Revision to Draft Permit Condition

1. Attachment B, Page B-3, Lines 20 to 24

Debris means solid material exceeding a 2.36 inch (in.) (60 millimeter) particle size that is intended for disposal and that is:

1. *a manufactured object, or*
2. *plant or animal matter, or*
3. *natural geologic material.*

However, for the purpose of this WAP, all heterogeneous materials, or waste materials whose physical form does not lend itself to sampling and analysis may be managed as debris regardless of the size of the waste materials.

COMMENT 24: DRAFT PERMIT ATTACHMENT B, PAGE B-5, LINES 2 TO 10

A. Draft Permit Attachment Text

Once the required waste characterization is complete, the generator will complete a Waste Stream Profile Form to document the results of their characterization activities (see Section B-1d). The data reports and Waste Stream Profile Forms resulting from waste characterization activities shall be transmitted to the Permittees, reviewed for completeness, and screened for acceptance prior to loading any TRU mixed waste into the Transuranic Package Transporter (TRUPACT-II) at the generator facility, as described in Section B-4. Only TRU mixed waste that has been characterized in accordance with this WAP and that meets the waste acceptance criteria (WAC) specified in this Permit, will be accepted for disposal at the WIPP facility.

B. Discussion of Draft Permit Condition

The NMED defines the waste acceptance criteria (WAC) as those criteria specified in the "Permit." This is a subset of the DOE's WAC as defined in the WIPP Waste Acceptance Criteria, WIPP/DOE 069. The use of the same term for different sets of criteria could result in significant confusion. The Permittees suggest giving a unique title to the Final Permit's waste acceptance criteria, such as treatment, storage, or disposal facility-waste acceptance criteria (TSDF-WAC).

C. Proposed Revision to Draft Permit Condition

1. Attachment B, Page B-5, Lines 2 to 10

*Once the required waste characterization is complete, the generator/storage site will complete a Waste Stream Profile Form to document the results of their characterization activities (see Section B-1d). The data reports (when requested) and Waste Stream Profile Forms resulting from waste characterization activities shall be transmitted to the Permittees, reviewed for completeness, and screened for acceptance prior to loading any TRU mixed waste into the Transuranic Package Transporter (**TRUPACT-II**) at the generator/storage facility, as described in Section B-4. Only TRU mixed waste that has been characterized in accordance with this WAP and that meets the treatment, storage, or disposal facility-waste acceptance requirements (**TSDF-WAC**) specified in this Permit, will be accepted for disposal at the WIPP facility.*

2. Attachment B, Page B-7, Lines 24 to 29

TSDF-WAC have been developed to limit the VOC concentrations in the headspace of waste containers to those which, when averaged on a room basis, will ensure compliance with the performance standards. The limits are presented in Table B-2 as maximum allowable VOC container-average headspace concentration limits. There are no maximum allowable headspace gas concentration limits for individual containers, as some containers can exceed these values as long as averages in a disposal room do not.

3. Attachment B, Page B-8, Lines 1 and 2

- *The date the site was certified by the CAO.*

4. Attachment B, Page B-8, Lines 19 to 26

The Permittees are responsible for the review of Waste Stream Profile Forms (see Section B-4b and Figure B-1) and data records to verify compliance with the restrictions on TRU mixed wastes for WIPP disposal. The Permittees will review of shipping records (see Section B-4b) to verify that each container has been prepared and characterized in accordance with the applicable provisions of this WAP. Waste characterization data shall confirm the absence of prohibited items specified in Section B-1c.

5. Attachment B, Page B-24, Lines 24 to 32

The Waste Stream Profile Form is provided as Figure B-1. It includes information on the generator/storage site name and EPA identification number, the technical contact for information on that waste stream, the WIPP ID, Summary Category Group, listing of acceptable knowledge documentation used, and waste characterization data package identification numbers associated with that waste stream. The form also requires the date of site certification for that waste stream, procedures used for characterization, and EPA Hazardous Waste Code designations. Upon the Permittees' approval of the TRU mixed waste stream for disposal, the generator may begin shipping waste containers from that waste stream.

6. Attachment B, Page B-26, Lines 24 to 39 and Page B-27, Lines 1 to 11

The Permittees will examine the Waste Stream Profile Form. The assignment of the waste stream description; Summary Category Groups; the results of waste analyses; the acceptable knowledge results; the methods used for characterization; and appropriate designation of EPA hazardous waste code(s) will be examined. If the Waste Stream Profile Form is inaccurate, efforts will be made to resolve discrepancies by contacting the generator/storage site. If discrepancies in the waste stream are detected at the generator/storage site, the site will implement a non-conformance program to identify, document, and report discrepancies (Permit Attachment B3). The Waste Stream Profile Form verification checks must be satisfactory in order for the waste stream to be approved for shipment to the WIPP facility. The Waste Stream Profile Form check against waste container data will occur during the initial Waste Stream Profile Form approval process.

The Permittees will compare the EPA hazardous waste codes for the wastes that appear on the Waste Stream Profile Form to those in the Permittees' RCRA Part A Permit Application (Permit Attachment O) to ensure that only wastes that contain constituents identified in the Part A are approved for shipment to the WIPP. Analytical data package summaries will be reviewed by the Permittees to verify that the waste has been classified correctly. The analytical method used will be compared to those listed in Tables B-3, B-4, and B-5 to assure that only approved analytical methods were used for analysis of the waste. The Permittees will verify that the generator site has been granted authority.

7. Attachment B, Page B-28, Lines 22 to 23

Delete this bullet because WIPP waste is exempted from the land disposal restrictions.

8. Attachment B, Table B-6, Pages B-44, B-45, B-46, and B-47, Starting on Lines 8 in All Cases

- *Demonstrate compliance with TSDF-WAC (e.g., no free liquids, no incompatible wastes, no compressed gases)*

9. Attachment B2, Page B2-1, Lines 6 to 11

The data obtained from the visual examination shall also be used to determine, with acceptable confidence, the percentage of miscertified waste containers from the radiographic examination. Miscertified containers are those that radiography indicates meet the Waste Isolation Pilot Plant TSDF-WAC but visual examination indicates do not meet these criteria.

10. Attachment B3, Page B3-28, Lines 21 to 24

The WWIS Data Dictionary contains all of the data fields, the field format and the limits associated with the data as established by TSDF-WAC. These data will be subjected to edit and limit checks that are performed automatically by the database.

11. Attachment B4, Page B4-6, Lines 7 to 8

- *WIPP WAP in Permit Attachment B and the Treatment, Storage, or Disposal Facility-Waste Acceptance Criteria specified in this permit*

12. Module II.C.2., Page II-4

2 <u>TSDF-Waste Acceptance Criteria</u>

The Permittees shall not accept TRU mixed wastes at the WIPP for storage, management, or disposal which fail to meet the treatment, storage, or disposal facility-waste acceptance criteria (TSDF-WAC) as presented in Permit Conditions II.C.2.a through II.C.2.l of this Permit.

13. Module II.C.4, Page II-7

Any WIPP-generated waste derived from adequately characterized, WIPP-accepted TRU mixed waste generated at an off-site facility (derived waste) does not need to be additionally characterized if the Permittees use the generator's characterization data and knowledge of the processes at the WIPP facility to identify and characterize derived waste. Derived waste containers shall be managed according to Permit Attachment M1, Section M1-1d(1), and meet all B of WAC in Permit Condition II.C.2 prior to disposal at WIPP.

14. Module III.B.1.b, Page III-4

<u>TSDF-WAC</u> - the TRU mixed waste shall comply with the TSDF-WAC specified in Permit Condition II.C.2.

15. Module IV.B.1.b, Page IV-2

<u>TSDF-WAC</u> - the TRU mixed waste shall comply with the TSDF-WAC specified in Permit Condition II.C.2.

16. Attachment E, Page E-8, Lines 31 to 37 and Page E-9, Lines 1 to 3

*TRU mixed waste received for emplacement at the WIPP facility must be certified under this Permit's treatment, storage, or disposal facility-waste acceptance criteria (**TSDF-WAC**) as nonliquid waste; in some cases, the Permit allows up to one percent residual liquids. The TSDF-WAC are procedural controls that must be met at the generator/storage site and the data must be verified by the WIPP facility staff prior to acceptance for the Disposal Phase and shipment to the WIPP facility. Permit Module II and Permit Attachment B contain information regarding TSDF-WAC requirements for shipping and discusses receipt and verification of the TRU mixed waste at the WIPP facility. Derived waste must also meet all TSDF-WAC requirements prior to disposal. Calculations in Permit Attachment M1 demonstrate that one percent residual liquid in TRU mixed waste containers is easily contained by the WHB Unit floor.*

17. Attachment E, Page E-12, Lines 21 and 22

- *The TSDF-WAC are criteria designed to prevent the shipment or acceptance of TRU mixed waste exhibiting the characteristics of ignitability, corrosivity, or reactivity.*

18. Attachment F, Page F-5, Lines 32 to 35

*Special requirements for ignitable, reactive, and incompatible waste are addressed in 20 NMAC 4.1.500 (incorporating 40 CFR §§ 264.176 and 177). The RCRA Permit Treatment, Storage, or Disposal Facility-Waste Acceptance Criteria (**TSDF-WAC**) preclude ignitable, reactive, or incompatible TRU mixed waste at the WIPP.*

19. Attachment F, Page F-7, Lines 24 to 27

The WHB Unit has concrete floors which are sealed with an impermeable coating that resists all but the strongest oxidizing agents. Such oxidizing agents do not meet the TSDF-WAC and will not be accepted in TRU mixed waste at the WIPP facility. Therefore, TRU mixed wastes pose minimal compatibility problems with respect to the WHB floor.

20. Attachment F, Page F-38, Lines 18 to 28

Implementation of the TSDF-WAC for the WIPP ensures that incompatible TRU mixed waste will not be shipped to the WIPP facility. Nonradioactive waste generated at the WIPP facility will be carefully segregated during handling and holding and will be transported within and off the facility. The RCRA Emergency Coordinator will not allow hazardous or TRU mixed waste operations to resume in a building or area in which incompatible materials have been released prior to completion of necessary post-emergency cleanup operations to remove potentially incompatible materials. In making the determination of compatibility, the RCRA Emergency Coordinator will have available the resources and information described in Section F-4b, Identification of Hazardous Materials. In addition, ES&H department personnel will be available for consultation. Finally, the RCRA Emergency Coordinator may use EPA-600/2-80-076, (EPA, 1980).

21. Attachment F, Page F-39, Lines 18 to 24

The waste received at the WIPP facility will meet stringent TSDF-WAC (e.g., no free liquids and less than one percent residual liquids), which will minimize the possibility of waste container degradation and liquid spills. Should a spill or release occur from a container, the WIPP facility will immediately take the following actions, in compliance with 20 NMAC 4.1.500 (incorporating 40 CFR § 264.52(a) and § 264.171):

22. Attachment H2, Page H2-140, Lines 2 to 5

Demonstrate knowledge of the following project document data requirements:

- *TSDF-Waste Acceptance Criteria*
- *WIPP Quality Assurance Program Plan*
- *Waste Analysis Plan*

23. Attachment I, Page I-12, Lines 12 to 13

5. Disposal of equipment/materials that cannot be decontaminated but that meet the treatment, disposal, or storage facility-waste acceptance criteria (TSDF-WAC) in an underground HWDU

24. Attachment I3, Page I3-3, Lines 3 to 16

*TRU mixed waste is defined as transuranic waste which is also a hazardous waste. The processes responsible for the radioactivity in the waste are, for the most part, the same processes responsible for making it a hazardous waste. Therefore, the TRU mixed waste forms are described in terms of both classes of waste (radioactive and hazardous). This Permit's Treatment, Storage, or Disposal Facility-Waste Acceptance Criteria (**TSDF-WAC**) in Module II place limits on the waste that can be shipped to the WIPP facility based on the characteristics of the waste form. According to this Permit's TSDF-WAC, certain waste forms with specific characteristics are not allowed at the WIPP facility. Liquid waste is one waste form that is not allowed. Other limitations include, but are not limited to, a prohibition on pyrophoric materials, corrosive materials, ignitable waste, and compressed gases. Furthermore, TRU waste must contain 100 nanocuries or more of transuranic elements per gram of waste, which means that the radioactive component of the waste will always be*

present within the waste. This Permit's TSDF-WAC limitations and restrictions are provided to ensure that any waste form received at the WIPP facility is stable and can be managed safely.

25. Attachment M1, Page M1-1, Lines 17 to 24

*This Permit's Treatment, Storage, or Disposal Facility-Waste Acceptance Criteria (**TSDF-WAC**) and the Waste Analysis Plan (Permit Attachment B) prohibit the shipment of liquid waste to the WIPP. This prohibition is enforced as a maximum residual liquids requirement. In no case shall the total liquid equal or exceed one volume percent of the waste container (e.g., drum or standard waste box [**SWB**]). Since the maximum amount of liquid is one percent, calculations made to determine the secondary containment as required by 20 NMAC 4.1.500 (incorporating § 264.175) are based on ten percent of one percent of the volume of the containers, or one percent of the largest container, whichever is greater.*

26. Attachment M1, Page M1-11, Lines 26 to 29

- *Shipment to another DOE site for management in the event the original shipper does not have suitable facilities for decontamination.*

27. Attachment M1, Page M1-14, Lines 27 to 40

The WHB Unit has concrete floors, which are sealed with a coating that is designed to resist all but the strongest oxidizing agents. Such oxidizing agents do not meet the TSDF-WAC and will not be accepted in TRU mixed waste at the WIPP facility. Therefore, TRU mixed wastes pose no compatibility problems with respect to the WHB Unit floor. The floor coating consists of Carboline® 1340 clear primer-sealer on top of prepared concrete, Carboline® 191 primer epoxy, and Carboline® 195 surface epoxy. The manufacturer's chemical resistance guide shows "Very Good" for acids and "Excellent" for alkalies, solvents, salt, and water. Uses are indicated for nuclear power plants, industrial equipment and components, chemical processing plants, and pulp and paper mills for protection of structural steel and concrete. During the Disposal Phase, should the floors need to be re-coated, any floor coating used in the WHB Unit TRU mixed waste handling areas will be compatible with the TRU mixed waste constituents and will have chemical resistance at least equivalent to the Carboline® products. Figure M1-13 is a plan view of the WHB, showing areas where CH TRU mixed waste handling activities discussed in this section occur.

COMMENT 25: DRAFT PERMIT ATTACHMENT B, PAGE B-7, LINES 24 TO 29

A. Draft Permit Attachment Text

WAC have been developed to limit the VOC concentrations in the headspace of waste containers to those which when averaged on a room basis, will ensure compliance with the performance standards. These limits are presented in Table B-2 as maximum allowable VOC room-averaged headspace concentration limits. There are no maximum allowable headspace gas concentration limits for containers, as some containers can exceed these values as long as averages in a disposal room do not.

B. Discussion of Draft Permit Condition

The NMED has imposed VOC limits expressed as maximum allowable VOC room-average headspace concentration limits. The Draft Permit does not explain or provide any justification for how the limits were derived nor how the limits protect human health or the environment. In contrast, the limits proposed by the Permittees in the Application were based on standard EPA risk assessment protocols and Occupational Safety and Health Administration (OSHA) standards. There is no reason to deviate from these limits. The Draft Permit's limits are more stringent than those established at any other RCRA-regulated facilities in New Mexico. The more stringent limits are not justified based on protection of human health or the environment, and should not be part of the Final Permit. Instead, the well-justified limits in the Application should be used.

C. Proposed Revision to Draft Permit Condition

1. Attachment B, Page B-7, Lines 24 to 29

TSDF-WAC have been developed to limit the VOC concentrations in the headspace of waste containers to those which when averaged on a room basis, will ensure compliance with the performance standards. The limits are presented in Table B-2 as maximum allowable VOC container-average headspace concentration limits. There are no maximum allowable headspace gas concentration limits for individual containers, as some containers can exceed these values as long as container headspace averages in a disposal room do not.

2. Attachment B, Table B-2, Page B-39

COMPOUND	VOC HEADSPACE CONCENTRATION LIMITS[a] (PPMV)
Carbon Tetrachloride	7,510
Chlorobenzene	17,660
Chloroform	6.325
1,1-Dichloroethene	28,750
1,2-Dichloroethane	9,100
Methylene Chloride	100,000
1,1,2,2-Tetrachloroethane	7,924
Toluene	41,135
1,1,1-Trichloroethane	100,000

[a] There are no headspace limits for other VOCs.

COMMENT 26: DRAFT PERMIT ATTACHMENT B, PAGE B-9, LINES 21 TO 28

A. Draft Permit Attachment Text

TRU mixed waste may be characterized in lots (Section B-1a) and/or batches. A sampling batch can be up to 20 samples (excluding field QC samples), all of which shall be collected within 14 days of the first sample in the batch. An analytical batch can be up to 20 samples (excluding laboratory QC samples), all of which shall be received by the laboratory and prepared for analysis within 14 days of the validated time of sample receipt of the first sample in the batch. For on-line integrated headspace-gas sampling/analytical systems, samples will be collected and analyzed within a 12-hour period using the same on-line integrated sampling/analysis system.

B. Discussion of Draft Permit Condition

With one significant exception, the Draft Permit language is from the permit application and reflects the requirement the generator/storage sites are currently following. There is no precedent however, for including the sample preparation as an additional restriction in the analytical batch definition. SW-846, Chapter 1, defines a batch as "A group of samples which behave similarly with respect to the sampling or the testing procedures being employed and which are processed as a unit. For QC purposes, if the number of samples in a group is greater than 20, then each group of 20 samples or less will all be handled as a separate batch." SW-846 does not mention sample preparation in this definition. The definition in the Application is already more restrictive than the SW-846 definition. The requirement that the samples must be prepared within 14 days of VTSR of the first sample invalidates the need of holding times greater than 14 days. The date of sample preparation is defined by the analytical holding time, not the date of receipt at the laboratory, and should not be included in the definition of an analytical batch. This new definition is unnecessary and does not improve the quality of the data.

C. Proposed Revision to Draft Permit Condition

1. Attachment B, Page B-9, Lines 21 to 28

TRU mixed waste may be characterized in lots (Section B-1a) and/or batches. A sampling batch can be up to 20 samples (excluding field QC samples), all of which shall be collected within 14 days of the first sample in the batch. An analytical batch can be up to 20 samples (excluding laboratory QC samples), all of which must be received by the laboratory within 14 days of the validated time of sample receipt of the first sample in the batch. For on-line integrated headspace-gas sampling/analytical systems, samples will be collected and analyzed within a 12-hour period using the same on-line integrated sampling/analysis system.

COMMENT 27: DRAFT PERMIT ATTACHMENT B3, PAGE B-10, LINES 4 to 14

A. Draft Permit Attachment Text

Every TRU mixed waste container will be sampled and analyzed to determine the concentrations of VOCs (presented in Table B-3) in headspace gases. Sampling protocols, equipment, and QA/QC methods for headspace-gas sampling are provided in Permit Attachment B1. In accordance with EPA convention, identification of compounds detected by gas chromatography/mass spectrometry methods that are not on the list of target analytes shall be reported. These compounds are reported as tentatively identified compounds (TICs) in the waste data package and shall be added to the target analyte list if detected in a given waste stream and if they appear in either the 20 NMAC 4.1.200 (incorporating 40 CFR §261) Appendix VIII or the 20 NMAC 4.1.500 (incorporating 40 CFR §264) Appendix IX list. The headspace gas analysis method Quality Assurance Objectives (QAOs) are specified in Permit Attachment B3.

B. Discussion of Draft Permit Condition

The SW-846 requirement for reporting TICs is on a sample-by-sample basis. TICs are only reported if they meet the minimum requirements for the major ions' relative intensities and agreement with the reference spectrum. The USEPA Contract Laboratory Program, National Functional Guidelines for Organic Data Review, require that for each sample, the laboratory must conduct a mass spectral search of the NIST library and report the possible identity for the 10 largest volatile fraction peaks (or 20 largest semivolatile fraction peaks) which are not system monitoring compound, internal standard, or target compounds, but which have area or height greater than 10 percent of the area or height of the nearest internal standard. By limiting the number of TICs to 20 for GC/MS and five for FTIRS, the Draft Permit remains consistent with SW-846 and the CLP.

TIC data analysis is one of the most time-consuming portions of the data reduction, review, and reporting. SW-846 requires that only after visual comparison of the sample spectra with the nearest library searches may the analyst assign a tentative identification. By not limiting the number, prevalence, and frequency of occurrence for TICs that must be reported, no boundary is placed on the amount of additional data analyses required for each sample and waste stream.

Hazardous constituents listed in Appendix VIII include some that are regulated by RCRA and the HWA (as U and P codes), while others are not hazardous wastes. There is no authority under RCRA or the HWA for monitoring or measuring TICs that are not hazardous wastes. In addition, it is unreasonable to require Appendix VIII compounds to be added to the target analyte list because SW-846 analytical methods do not include all of the compounds on the list. Furthermore, there is no basis for requiring a second confirmatory analysis, since TICs are just that, tentatively identified compounds that are not included in the analyte list. If a second confirmatory analysis were required, laboratories would have to obtain new standard mixtures, develop new calibrations, revise forms and procedures, and update software, method performance data, which offers no benefit to the program. Before a compound is added to the target analyte list, a rationale for the data use is needed and needs to be reported in a given percentage of the samples. The Application provided such a threshold: a TIC must be found in 25% or more of the samples from a waste stream.

There are no data quality objectives for TICs that are related to RCRA or HWA permit compliance and are qualitatively determined, and therefore should not be used to make compliance decisions. The Application's approach to identifying and reporting TICs is reasonable and should be used.

C. Proposed Revision to Draft Permit Condition

1. Attachment , Page B-10, Lines 4 to 14

*Sampling protocols, equipment, and QA/QC methods for headspace-gas sampling are provided in Permit Attachment B1. In accordance with EPA convention, identification of hazardous constituents detected by gas chromatography/mass spectrometry methods that are not on the list of target analytes shall be reported. These compounds (up to 20 for GC/MS and 5 for FTIRS) are reported as tentatively identified compounds (**TICs**) in the batch data report and shall be added to the target analyte list if they are listed in 20 NMAC 4.1.200 (incorporating 40 CFR §261) Appendix VIII or the 20 NMAC 4.1.500 (incorporating 40 CFR §264) Appendix IX and are detected in 25% of the samples from a given waste stream. The headspace gas analysis method Quality Assurance Objectives (**QAOs**) are specified in Permit Attachment B3.*

2. Attachment B, Page B-12, Lines 36-41, and Page B-13, Lines 1-8

A statistically portion of each mixed waste stream is sampled and analyzed for VOCs in the headspace gas. A statistically selected portion of each homogeneous solids and soil/gravel waste stream is sampled and analyzed for RCRA-regulated total VOCs, SVOCs, and metals (see Permit Attachment B2). Sampling and analysis methods used for waste characterization are discussed in Section B-3a. In the process of performing organic headspace and solid sample analyses, nontarget hazardous constituents may be identified. These compounds will be reported as TICs and if they occur in 25% of the samples from a given waste stream they are added to the target analyte list. TICs which qualify as target analytes and are also listed in 20 NMAC 4.1.500 (incorporating 40 CFR §264) Appendix IX, will be compared with acceptable knowledge data to determine if the TIC is a listed hazardous constituent in the waste. If the TIC cannot be identified as a component of waste packaging materials, the Permittees will add these TICs to the list of hazardous constituents for the waste stream (and assign additional EPA hazardous waste codes, if appropriate).

3. Attachment , Page B-9, Lines 10 to 12

- *Hazardous constituents included in 20 NMAC 4.1.500 (incorporating 40 CFR Part 264) Appendix IX as specified in Tables B-1, B-3, and B-4, as well as any other hazardous constituent identified through acceptable knowledge.*

COMMENT 28: DRAFT PERMIT ATTACHMENT B, PAGE B-10, LINES 16 TO 20

A. Draft Permit Attachment Text

Sampling of homogeneous and soil/gravel wastes shall result in the collection of a sample that is representative of the waste stream. Representative sampling is accomplished through core sampling, which is described in Permit Attachment B1. The waste containers for sampling and analysis are to be selected randomly from the population of containers for the waste stream. The random selection methodology is specified in Permit Attachment B2.

B. Discussion of Draft Permit Condition

Attachment B-1 describes the sampling methods for the program, with specific details related to coring drums of homogeneous solids. For newly generated waste, coring will not likely be the appropriate sampling technique. To minimize potential exposures and more effectively obtain a representative sample, sites will use tools for sampling process lines or waste batches prior to packaging. To accommodate these sampling techniques, SW-846 protocols will be used. Thus, the reference to coring should be deleted.

C. Proposed Revision to Draft Permit Condition

1. Attachment B, Page B-10, Lines 16 to 20

Sampling of homogeneous and soil/gravel wastes shall result in the collection of a sample that is representative of the waste stream. Representative samples are collected as described in Permit Attachment B1. The waste containers for sampling and analysis are to be selected randomly from the population of containers for the waste stream. The random selection methodology is specified in Permit Attachment B2.

2. Attachment B, Page B-15, Lines 33 to 36

The toxicity characteristics of newly generated homogeneous solids and soils/gravel waste streams will be determined using total analysis of toxicity characteristic contaminants, or TCLP . The sampling methods for homogeneous solids and soil/gravel wastes is provided in Permit Attachment B1.

3. Attachment B, Page B1-12, Lines 33 to 37 and Page B1-13, Lines 1 to 3

Sampling equipment is selected based on waste- and site-specific factors, such as waste matrix and the size and configuration of the container or process that is sampled. To sample homogenous solids and soil/gravel from waste containers, coring tools are used when possible as described in B1-2a(1). To sample a waste from a process as it is generated (e.g., pipes, tanks) or to sample nonmonolithic containerized wastes (e.g., chunks of material) other sampling equipment must be used to obtain a representative sample. When coring tools cannot be used to obtain a representative sample, sampling devices described in SW-846 shall be used to collect samples of homogeneous solids and soil/gravel. All sampling will comply with the QC requirements specified in B1-2b.

4. Attachment B1, Page B1-16, Lines 4 to 9

*QC requirements for sampling homogenous solids and soil/gravel include collecting collocated samples to determine precision; equipment blanks to verify cleanliness of the sampling tools and equipment; and analysis of reagent blanks to ensure reagents, such as deionized or high pressure liquid chromatography (**HPLC**) water, are of sufficient quality. Sampling of homogenous solids and soil/gravel shall comply, at minimum, with the following QC requirements.*

5. Attachment B1, Page B1-16, Lines 10 to 25

B1-2b(1) Co-located Samples

*In accordance with the requirement to collect field duplicates required by the Environmental Protection Agency (**EPA**) methods found in SW-846 (EPA 1996), co-located samples shall be collected to determine the combined precision of the sampling procedures. The co-located sample methodology is a duplicate sample collection methodology intended to collect samples from approximately the same location within the drum. Samples shall be collected side by side as close as feasible to one another, handled in the same manner, visually inspected through the transparent liner, and sampled in the same manner at the same randomly selected sample location. If the visual examination detects inconsistencies such as color, texture, or waste type in the waste at the sample location, another sampling location may be randomly selected, or the samples may be invalidated and co-located samples may again be collected. Co-located samples shall be collected at a frequency of one per sampling batch. A sampling batch is a suite of homogenous solids and soil/gravel samples collected consecutively using the same sampling equipment within a specific time period. A sampling batch can be up to 20 samples (excluding field QC samples), all of which shall be collected within 14 days of the first sample in the batch.*

6. Attachment B1, Page B1-16, Lines 27 to 40 and Page B1-17, Lines 1 to 38

*In accordance with SW-846 (EPA 1996), equipment blanks shall be collected from fully assembled sampling tools prior to first use after cleaning at a frequency of one per equipment cleaning batch. An equipment cleaning batch is the number of sampling equipment items cleaned together at one time using the same cleaning method. The equipment blank shall be collected from the fully assembled sampling tool, in the area where the sampling tools are cleaned. The equipment blank shall be collected by pouring clean water (e.g., deionized water, HPLC water) down the inside of the liners of the assembled sampling tool. The water shall be collected in a clean sample container placed at the leading edge of the sampling tool and analyzed for the analytes listed in Tables B3-4, B3-6, and B3-8 of Permit Attachment B3. The results of the equipment blank will be considered acceptable if the analysis indicates no analyte at a concentration greater than three times the MDLs listed in Tables B3-4 and B3-6 or in the Program Required Detection Limits (**PRDL**) in Table B3-8 of Permit Attachment B3. If analytes are detected at concentrations greater than three times the MDLs, then the associated equipment cleaning batch of sampling tools shall be cleaned again and another equipment blank collected. Equipment from an equipment cleaning batch may not be used until analytical results have been received verifying an adequately low level of contamination in the equipment blank.*

Equipment blanks shall be collected from liners that are cleaned separately from the sampling tools. These equipment blanks shall be collected at a frequency of one per equipment cleaning batch. The equipment blanks shall be collected by randomly selecting a liner from the equipment cleaning batch, pouring clean water (e.g., deionized water or HPLC water) across its internal surface, collecting the water in a clean sample container, and analyzing the water for the analytes listed in Tables B3-4, B3-6, using the PRDLs in Section B3-9 of Permit Attachment B3. The results of the equipment blank analysis will be considered acceptable if the results indicate no analyte at a concentration greater than three times the MDLs listed in Tables B3-4, B3-6, or B3-9 of Permit Attachment B3. If analytes are detected at concentrations greater than three times the MDLs (or PRDLs for metals), then the associated equipment cleaning batch of liners shall be cleaned again and another equipment blank collected. Equipment from an equipment cleaning batch may not be used until analytical results have been received verifying an adequately low level of contamination in the equipment blank.

Sampling equipment (e.g., bowls, spoons, chisel, VOC sub-sampler) shall also be cleaned. Equipment blanks shall be collected for the sampling equipment at a frequency of one per equipment cleaning batch. After the sampling equipment has been cleaned, one item from the equipment cleaning batch is randomly selected, water (e.g., deionized water, HPLC water) is passed over its surface, collected in a clean container, and analyzed for the analytes listed in Tables B3-4, B3-6, and B3-9 of Permit Attachment B3. The results of the equipment blank will be considered acceptable if the results indicate no analyte present at a concentration greater than three times the MDLs listed in Tables B3-4 and B3-6 and in the PRDLs in B3-9 of Permit Attachment B3. If analytes are detected at concentrations greater than three times the MDLs (or PRDLs for metals), then the associated equipment cleaning batch of sampling equipment shall be cleaned again and another equipment blank collected. Equipment from an equipment cleaning batch may not be used until analytical results have been received verifying an adequately low level of contamination in the equipment blank.

The results of equipment blanks shall be traceable to the items in the equipment cleaning batch that the equipment blank represents. All sampling items should be identified, and the associated equipment cleaning batch should be documented. The method of documenting the connection between equipment and equipment cleaning batches shall be documented. Equipment blank results for the sampling tools, liners, and sampling equipment shall be reviewed prior to use.

A site may choose to discard liners and sampling tools after one use. In this instance, cleaning and equipment blank collection is not required.

7. Attachment B1, Page B1-18, Lines 1 to 24

B1-2b(3) Sampling Tool and Equipment Cleaning

Sampling tools and equipment shall be cleaned in accordance with the following requirements:

- *All surfaces of sampling tools and equipment that will come into contact with the sample shall be clean prior to use. All sampling equipment shall be cleaned in the same manner. Immediately following cleaning, sampling tools and equipment shall be assembled and sealed inside clean protective wrapping.*

- *Each sampling tool shall have a unique identification number. Each number shall be referenced to the waste container on which it was used. This information shall be recorded in the field records. One sampling tool from each equipment cleaning batch shall be tested for cleanliness in accordance with the requirements specified above. The identification number of the sampling tool from which the equipment blank was collected shall be recorded in the field records. The results of the equipment blank analysis for the equipment cleaning batch in which each sampling tool was cleaned shall be submitted to the sampling facility with the identification numbers of all sampling tools in the equipment cleaning batch. If analytes are detected at concentrations greater than three times the MDLs (or PRDLs for metals), then the associated equipment cleaning batch of sampling equipment shall be cleaned again and another equipment blank collected. Equipment from an equipment cleaning batch may not be used until analytical results have been received verifying an adequately low level of contamination in the equipment blank.*

- *Sample containers shall be cleaned in accordance with SW-846 (EPA 1996).*

COMMENT 29: DRAFT PERMIT ATTACHMENT B, PAGE B-11, LINES 35 to 37 and PAGE B-12, LINES 1 to 11

A. Draft Permit Attachment Text

Generator sites may conduct visual examination of waste containers in lieu of radiography. For sites that choose to use visual examination in lieu of radiography, the detection of any liquid waste in non-transparent inner containers, detected from shaking the container, will be handled by assuming that any liquid that is detected is over permit limits and the container will be rejected and/or repackaged to exclude the unacceptable characteristic. When radiography is used, or visual examination of transparent containers is performed, if any liquid in inner containers is detected, the item (in the case of VE) or container (in the case of radiography) will be rejected. Radiography, or the equivalent, will be used on the existing/stored waste containers to verify the physical characteristics of the TRU mixed waste correspond with its waste stream identification/waste stream Waste Matrix Code and to identify prohibited items. The results of radiography are verified through visual examination of a statistically selected subpopulation of TRU mixed waste containers in each TRU mixed waste stream. Radiographic examination protocols and QA/QC methods are provided in Permit Attachment B1.

B. Discussion of Draft Permit Condition

The waste acceptance requirements of the Draft Permit allow acceptance of waste for disposal with residual liquids that contains "less than 1 inch or 2.5 centimeters of liquid in the bottom of the container." This requirement is applied inconsistently in the Draft Permit.

C. Proposed Revision to Draft Permit Condition

1. Attachment B, Page B-11, Lines 35 to 37 and Page B-12, Lines 1 to 11

Generator/storage sites may examine waste containers in lieu of radiography. For generator/storage sites that choose to use visual examination in lieu of radiography, the detection of any liquid waste in non-transparent inner containers, detected from shaking the container, will be handled by assuming the container is filled with liquid and adding this volume to the total liquid in the payload container (e.g., 55-gallon drum or standard waste box). When radiography is used, or visual examination of transparent containers is performed, the estimated volume of liquid shall be added to the total for the payload container. Radiography, or the equivalent, will be used on the existing/stored waste containers to verify that the physical characteristics of the TRU mixed waste correspond with their waste stream identification/waste stream Waste Matrix Code and to detect prohibited items. The results of radiography are verified through visual examination of a statistically selected population of containers examined over the course of a 12 month period. Radiographic examination protocols and QA/QC methods are provided in Permit Attachment B1.

COMMENT 30: DRAFT PERMIT ATTACHMENT B3, PAGE B-11, LINES 35 TO 37 AND PAGE B-12, LINES 1 TO 11

A. Draft Permit Attachment Text

Generator sites may conduct visual examination of waste containers in lieu of radiography. For sites that choose to use visual examination in lieu of radiography, the detection of any liquid waste in non-transparent inner containers, detected from shaking the container, will be handled by assuming that any liquid that is detected is over permit limits and the container will be rejected and/or repackaged to exclude the unacceptable characteristic. When radiography is used, or visual examination of transparent containers is performed, if any liquid in inner containers is detected, the item (in the case of VE) or container (in the case of radiography) will be rejected. Radiography, or the equivalent, will be used on the existing/stored waste containers to verify the physical characteristics of the TRU mixed waste correspond with its waste stream identification/waste stream Waste Matrix Code and to identify prohibited items. The results of radiography are verified through visual examination of a statistically selected subpopulation of TRU mixed waste containers in each TRU mixed waste stream. Radiographic examination protocols and QA/QC methods are provided in Permit Attachment B1.

B. Discussion of Draft Permit Condition

SUMMARY: Visual examination is used to verify the radiography process on a statistically selected population of containers, regardless of the number of waste streams involved. It is erroneous to assume that in order to verify radiography, every waste steam examined through radiography must undergo visual examination.

DETAILED DISCUSSION: In the Application, the Permittees established the importance of visual examination for the verification of radiography. In several places, the Application stresses that the primary reason for visually examining the waste is to verify radiography results as follows:

> A mixture of debris (that has not been treated to the standards provided by 20 NMAC 4.1, Subpart VIII, §268.45), and other material is subject to regulation as debris if the mixture is comprised primarily of debris, by volume, based on visual inspection (20 NMAC 4.1, Subpart VIII, §268.2[g]). Due to the presence of radioactive contaminants in the waste and the safety hazards involved in opening waste containers, the DOE has opted to use radiography as a form of nondestructive examination of the waste form in place of visual examination of the waste form. For these reasons, radiography will be used on 100 percent of stored waste containers and most RH TRU waste containers to determine the physical composition of debris mixtures. The percentage of debris materials in mixtures in newly generated CH TRU waste will be determined by visual examination during packaging. (Page C-10)
> The WIPP facility will not accept waste that exhibits the characteristics of ignitability, reactivity, or corrosivity. The DOE ensures through administrative

and operational procedures at the generator/storage sites that TRU mixed waste received at the WIPP facility does not exhibit these characteristics. These characteristics are generally associated with liquid wastes or specific waste forms that may react violently. This WAP and the WAC, therefore, prohibit liquid waste, explosives, compressed gases, oxidizers, and pyrophorics. The absence of these wastes is confirmed by radiography, visual examination, and headspace analysis. (Page C-13)

To confirm the results of radiography, a statistically selected number of the CH waste container population will be visually examined by opening containers to inspect waste contents to verify radiography results. Appendix C6, Section C6-1 contains the approach used to statistically select the number of drums to be visually examined. (Page C-25)

As previously described, the waste characterization data obtained through this WAP implementation will be used to ensure that the WIPP facility meets regulatory requirements with regard to both regulatory compliance and to ensure that all wastes are properly managed during the Disposal Phase. The DQOs established for this plan are implemented by the QAPP. They are designed to address the specific waste characterization parameters that will be evaluated. To satisfy the RCRA regulatory compliance requirements, the following DQOs are established by this WAP and have been incorporated into the QAPP (DOE, 1995a): …

- Radiography

To verify the TRU waste streams by Waste Matrix Code for purposes of physical waste form identification and determination of sampling and analytical requirements.

- Visual Examination

To verify the TRU waste streams by Waste Matrix Code for purposes of physical waste form identification and determination of sampling and analytical requirements.

To provide a process check on a sample basis by verifying the information determined by radiography. (Page C-31)

<u>Visual Examination</u>
As an additional QC check, the radiography results must be verified directly by visual examination of the waste container contents. Visual examination must be performed on a statistically determined portion of waste containers to verify the results of radiography. This verification must include the matrix parameter category and waste material parameter weights. The verification must be performed through a comparison of radiography and visual examination results. The results of the visual examination must be transmitted to the radiography facility.

> The visual examination must consist of a semi-quantitative and/or qualitative evaluation of the waste container contents, and must be recorded on audio/videotape. The visual examination program has been developed by the DOE to provide an acceptable level of confidence in radiography. There is no equivalent method found in the EPA sampling and analysis guidance documents. A detailed procedure that meets the requirements of this method can be found in the Methods Manual. (C4-21)
>
> The qualitative data or descriptive information generated by radiography is not amenable to statistical analysis. However, radiography and visual examination are complementary techniques yielding similar data for determining the waste matrix code and waste material parameter weights of waste present in a waste container. Therefore, visual examination results shall be used to verify the waste matrix code and waste material parameter weights determined by radiography. (Page C8-1)

Radiography was developed by the DOE specifically to aid in the examination and identification of containerized waste. The objectives of radiography for the characterization program are to verify the matrix parameter category assignments and to verify the absence of prohibited items for each waste container. As a characterization tool, its use results in minimal additional radiation exposure to personnel.

The visual examination program was developed by the DOE primarily to provide an acceptable level of confidence in radiography. Visual examination is used in the waste characterization program as a quality control check on the results of radiographic examinations concerning matrix parameter category assignments and waste material parameter weight estimates. Visual examination may also be used to verify acceptable knowledge with regard to the waste matrix parameter category assessment. The approach for statistical selection of TRU waste containers for visual examination is based on the primary use of the visual examination results.

The impact of the Draft Permit Attachment language is that significantly more visual examinations will be required if containers are selected on a waste stream basis than on the basis of the number of containers that are to be characterized annually for the site (TRU waste containers for visual examination are selected from entire populations). The number of containers to be visually examined would depend on the size of the population of certified containers and the assumed miscertification rates (e.g., an annual population of 100 containers requiring 24 visual examinations would require 2 x 22 = 44 examinations if there were two waste streams of 50 drums each, assuming miscertification rates of two percent).

Miscertified containers are those that radiography indicates meet the WIPP WAC radiography-determined requirements but visual examination indicates that they do not meet the requirements. The WIPP WAC radiography-determined requirements are:

- correct matrix parameter category
- absence of pressurized containers/compressed gases
- absence of sealed containers >4 liters
- residual liquids are <2 liters in a 55-gal. drum <8 liters in an SWB and <1 inch in bottom of container
- rigid drum liners are vented

- presence of twist-and-tape bag closure

It has been assumed in the current container selection strategy , for examination that the miscertification rates that result from assessing containers against these criteria do not differ with waste type.

INEEL miscertification data were examined for homogeneous solids (S3000 and S4000) and debris (S5000) waste forms. The results show no statistical difference in miscertification proportions between homogeneous solids and debris wastes at the 0.05 significance level.

The significance of this is that, with no difference in miscertification rate among waste forms, the use of the historical rate in determining the number of containers for future visual examination is appropriate no matter what waste type or stream will be examined. Of course, the more historical data considered in estimating the rate, the better the estimate will be (note that the QAPP allows more than one year of historical data for the estimate of miscertification rates).

Increased visual examination may result in additional personnel exposures from increased container handling and waste sorting and examination, without providing greater confidence in the radiography process.

C. <u>Proposed Revision to Draft Permit Condition</u>

1. Attachment B, Page B-11, Lines 35 to 37 and Page B-12, Lines 1 to 11

Generator/storage sites may examine waste containers in lieu of radiography. For generator/storage sites that choose to use visual examination in lieu of radiography, the detection of any liquid waste in non-transparent inner containers, detected from shaking the container, will be handled by assuming the container is filled with liquid and adding this volume to the total liquid in the payload container (e.g., 55-gallon drum or standard waste box). When radiography is used, or visual examination of transparent containers is performed, the estimated volume of liquid shall be added to the total for the payload container. Radiography, or the equivalent, will be used on the existing/stored waste containers to verify that the physical characteristics of the TRU mixed waste correspond with their waste stream identification/waste stream Waste Matrix Code and to detect prohibited items. The results of radiography are verified through visual examination of a statistically selected population of containers examined over the course of a 12 month period. Radiographic examination protocols and QA/QC methods are provided in Permit Attachment B1.

2. Attachment B3, Page B3-25, Lines 28 to 30

Delete this bullet because it does not apply on a waste stream basis.

COMMENT 31: DRAFT PERMIT ATTACHMENT B, PAGE B-14, LINES 5 TO 21

A. Draft Permit Attachment Text

B-3d(1)(a) Sampling of Newly Generated Homogenous Solids

Newly generated waste streams of homogeneous solids will be randomly sampled a minimum of once per year for total PCBs, VOCs, SVOCs and metals. An initial five-sample set, however, will be collected to develop the baseline control chart. Sampling frequency of once per year is only allowed if a process has operated within procedurally established bounds without any process changes or fluctuations which would result in either a new waste stream or the identification of a new hazardous waste constituent in that waste stream. Otherwise, the waste shall be considered as process batches and each batch will undergo sampling and analysis. Process changes and process fluctuations will be determined using statistical process control charting techniques; these techniques require the five-sample baseline and historical data for determining limits for indicator species and subsequent periodic sampling to assess process behavior relative to historical limits. If the limits are exceeded, the waste stream shall be recharacterized, and the characterization shall be performed according to procedures required for retrievably stored waste (i.e., waste sampling frequency will be increased). The process behind this control charting technique is described in Permit Attachment B2.

B. Discussion of Draft Permit Condition

Ten samples is generally considered a minimum for control charting purposes. Both 5 and 10 are specified in the Draft Permit in different locations. The Draft Permit should be consistent and reflect an adequate number of samples upon which to base control limits.

Characterizing newly generated soil/gravel waste using the same approach used for retrievably stored homogeneous solids and soil/gravel negates the basic concept that acceptable knowledge will be used for newly generated waste characterization with verification sampling. Depending on the generating process, wastes may be from continuous processes or process batches. Soil/gravel wastes from remediation or decontamination and decommissioning activities may be considered process batches, with acceptable knowledge based on site characterization for these activities. Therefore, the use of the approach for retrievably stored wastes in lieu of those for continuous processes is not needed for characterization.

C. Proposed Revision to Draft Permit Condition

1. Attachment B, Page B-14, Lines 5 to 21

B-3d(1)(a) Sampling of Newly Generated Homogenous Solids and Soil/Gravel

Newly generated mixed waste streams of homogeneous solids and soils/gravels will be randomly sampled a minimum of once per year for total PCBs, VOCs, SVOCs and metals. An initial ten-sample set, however, will be collected to develop the baseline control chart. Sampling frequency of once per year is only allowed if a process has operated within

procedurally established bounds without any process changes or fluctuations which would result in either a new waste stream or the identification of a new hazardous mixed waste constituent in that waste stream. Otherwise, the waste shall be considered as process batches and each batch will undergo sampling and analysis. Process changes and process fluctuations will be determined using statistical process control charting techniques; these techniques require the ten-sample baseline and historical data for determining limits for indicator species and subsequent periodic sampling to assess process behavior relative to historical limits. If the limits are exceeded, the waste stream shall be recharacterized, and the characterization shall be performed according to procedures required for retrievably stored waste (i.e., waste sampling frequency will be increased). The process behind this control charting technique is described in Permit Attachment B2.

2. Attachment B, Page B-16, Lines 1 to 10

Delete this condition

3. Attachment B2, Page B2-6, Line 30

Logical sets of historical data to be used for the construction of limits in this application are the data from the initial characterization of the waste stream, if available, from characterization of a different lot of the mixed waste stream, or from a retrievably stored waste stream of the same type from the same process. At a minimum, the logical set shall include ten representative sample values collected and analyzed from the newly generated waste stream. The data used for construction of the limits shall be justified. The underlying assumptions for control charts are that the data are independent and normally distributed with constant mean μ and constant variance σ^2. The statistical tests for normality shall be conducted and data transformation to normality performed, if necessary. Transformations shall take place prior to any calculations that use the data.

4. Attachment B6, Table B6-1, Page B6-37

- *Newly generated mixed waste streams of homogeneous solid and soil/gravel are randomly sampled for VOC, SVOC, and metals analyses a minimum of once per year after an initial 10 sample set is collected (Section B-3d(1)a)*

COMMENT 32: DRAFT PERMIT ATTACHMENT B, PAGE B-15, LINES 17 TO 32

A. Draft Permit Attachment Text

The records generated by the process procedures will be examined weekly for indications of process changes or limits being exceeded that would change the output of that process. If these changes are discovered, the Permittees will notify NMED and cease shipment of that waste stream until a follow-up sample of process waste is collected and analyzed to assess whether the container contents are within those identified on the Waste Stream Profile Form. If the second analysis is not consistent with the Waste Stream Profile Form information, all waste containers in question will be segregated and a new Waste Stream Profile Form and waste generation procedures/bounds will be established. Records of that analysis will be available for examination by the auditors and will be provided to NMED. If records of the analysis are not available, the Permittees will not accept the waste stream at the WIPP facility for disposal. If a generator site changes a process but determines that increased sampling is not required because the change will not affect waste generated by that process, the Permittees and NMED shall be notified in the form of a memorandum to the DOE's Carlsbad Area Office (CAO) Waste Characterization Manager. Both the Permittees and NMED shall concur with the decision to not increase the sampling frequency before any additional waste from that process is shipped.

B. Discussion of Draft Permit Condition

The frequency of record review depends upon the type of process, the frequency of its operation, and the variability of the relevant process inputs. To specify weekly inspection of process records does not guarantee compliance with the permit requirements.

The NMED should only be notified if a waste that has been improperly characterized or is not included in the permit is accepted at the WIPP. If the Permittees determine that there has been an instance of noncompliance because of a change in the waste generating process, they will notify the NMED, as stated in Section I.D.16 of the Draft Permit. Additional notifications will not provide additional assurance of compliance with the permit.

Process control charts and process records are maintained and reviewed by the generator/storage sites to indicate any changes to the resulting waste stream before shipment to the WIPP. Generator/storage sites must have administrative controls to segregate different mixed waste streams. These controls are assessed by the Permittees during the audit and surveillance process. If a process changes, the generator is required to submit a new Waste Stream Profile Form for waste acceptance. The Waste Stream Profile Form is the notification of a new waste stream (e.g., a change in process).

C. Proposed Revision to Draft Permit Condition

1. Attachment B, Page B-15, Lines 17 to 22

The generator sites examine records resulting from each process during their periodic audits and surveillances to identify process changes or exceeded limits that would change

the mixed waste stream generated by that process. If such changes are discovered, the generator sites cease shipment of that waste stream until a follow-up sample of process waste is collected and analyzed to assess whether the container contents are within those identified on the Waste Stream Profile Form or an evaluation of the debris mixed waste. If the second analysis/evaluation is not consistent with the Waste Stream Profile Form information, all waste containers in question at the generator site will be segregated and a new Waste Stream Profile Form and waste generation procedures/bounds will be established. Records of that analysis will be available for examination by the auditors. If records of the analysis are not available, the Permittees will not accept the mixed waste stream at the WIPP facility for disposal.

COMMENT 33: DRAFT PERMIT ATTACHMENT B, PAGE B-16, LINES 12 TO 21

A. Draft Permit Attachment Text

All retrievably stored waste containers will first be delineated into waste streams using acceptable knowledge. All retrievably stored waste containers will be examined using radiography to confirm the physical waste form (Summary Category Group), to verify the absence of prohibited items, and to determine the waste characterization techniques to be used based on the Summary Category Groups (i.e., S3000, S4000, S5000). Repackaged retrievably stored waste will be considered newly generated waste. Radiographic analyses results will be compared to acceptable knowledge results to ensure correct Waste Matrix Code assignment and identification of prohibited items. If radiographic analysis do not confirm the physical waste form, waste will be reassigned as specified in Section B-3c. Sites may elect to substitute visual examination for radiographic analysis.

B. Discussion of Draft Permit Condition

Based on operational considerations, sites may characterize repackaged waste in accordance with the requirement for retrievably stored wastes rather than newly generated wastes. Based on the available facilities, equipment, trained personnel and the subject waste, radiography/visual examination may be a more effective and efficient characterization method to characterize a waste after it is repackaged. Because the waste characterization techniques for newly generated and retrievably stored wastes result in the same data of equal quality, either approach will comply with the WAP requirements. The Draft Permit should therefore not mandate that repackaged retrievably stored waste be managed as newly generated waste.

C. Proposed Revision to Draft Permit Condition

1. Attachment B, Page B-16, Lines 12 to 21

All retrievably stored waste containers will first be delineated into waste streams using acceptable knowledge. All retrievably stored waste containers will be examined using radiography to confirm the physical waste form (Summary Category Group), to verify the absence of prohibited items, and to determine the waste characterization and determination techniques to be used based on the Summary Category Groups (i.e., S3000, S4000, S5000). Radiographic results will be compared to acceptable knowledge results to ensure correct Waste Matrix Code assignment and identification of prohibited items. If radiographic analysis do not confirm the physical waste form, waste will be reassigned as specified in Section B-3c. Sites may elect to substitute visual examination for radiographic analysis.

COMMENT 34: DRAFT PERMIT ATTACHMENT B, PAGE B-19, LINES 27 TO 34 AND PAGE B-20, LINES 1 TO 3

A. Draft Permit Attachment Text

The sites will implement a sample handling and control program that will include the maintenance of field documentation records, proper labeling, and a chain of custody (COFC) record. The site Quality Assurance Project Plan (QAPjP) will document this program and include COFC forms to control the sample from the point of origin to the final analysis result reporting. The Permittees will review and approve the QAPjP, including their determination that the sample control program is adequate. The approved QAPjP will be provided to NMED prior to shipment of TRU mixed waste, as specified in Permit Attachment B5. If NMED finds that the QAPjP and sample handling and control program do not meet the applicable requirements of this WAP, the Permittees may be in violation of this Permit. Details of this sample control program are provided in Permit Attachment B1 and are summarized below to include:

B. Discussion of Draft Permit Condition

It is unclear why the NMED is specifying noncompliance with sample control and data generation provisions as potential violations of the permit. In the case of sample control, the Permittee would only be in violation of the Permit if the QAPjP was determined to be inadequate by the NMED and the incorrectly characterized waste had been accepted from the generator/storage site. Similarly, if audit results indicate that a generator/storage site is not complying with the WAP requirements as specified in their QAPjPs, a violation of the permit would only occur if incorrectly characterized waste was in fact accepted. The potential violation described in this condition should therefore be removed. The NMED states in the permit that the Permittee shall comply with all terms and conditions of the permit, including the attachments.

The New Mexico Hazardous Waste Act and Hazardous Waste Management Regulations, as well as the RCRA regulations, require that any permit conditions added by the regulator must be necessary to protect human health and the environment, must be reasonable, and must be required to make the permit applied for meet regulatory requirements. NMSA 1978 Section 74-4-4.2(C); 20 NMAC Section 4.1.901(A)(8); 40 CFR § 270.32(b). In addition, federal case law requires that such permit conditions be clear and unambiguous. United States of America v. Richard Heuer and Eugene Holderness, 4 F.3d 723 (9th Cir. 1993). Statements such as "If the NMED finds that the QAPjP and sample handling and control programs do not meet the applicable requirements of this WAP, the Permittees may be in violation of this Permit" do not meet any of the above requirements and are thus not proper permit conditions and should not appear in the final permit.

C. <u>Proposed Revision to Draft Permit Condition</u>

1. Attachment B, Page B-19, Lines 27 to 34 and Page B-20, Lines 1 to 3

*The sites implement a sample handling and control program that s the maintenance of field documentation records, proper labeling, and a chain of custody (**CofC**) record. The site Quality Assurance Project Plan (**QAPjP**) will document this program and include a reference for CofC forms to control the sample from the point of origin to the final analysis result reporting. The Permittees will review and approve the QAPjP, including their determination that the sample control program is adequate. The approved QAPjP will be provided to the NMED prior to shipment of TRU mixed waste, as specified in Permit Attachment B5. Details of this sample control program are provided in Permit Attachment B1 and are summarized below to include:*

2.. Attachment B-4, Page B-20, Line 19 to 31

The Permittees shall perform audits of the generator/storage site mixed waste characterization programs to verify compliance with the WAP and that site sampling, data collection, data validation, and reporting practices, as implemented by the site QAPjPs, will meet the DQOs in this WAP (Permittees Audit and Surveillance Program). The primary functions of these audits are to review batch data reports prepared by the generator/storage sites that demonstrate adherence to the applicable provisions of this WAP and assure adherence to the WAP characterization program. These audits ensure that implementation of the QAPjPs meet all applicable provisions of this WAP. Section B-4 and Permit Attachment B6 provide additional information on the audits of the generator/storage sites performed by the Permittees. The Permittees shall provide the results of each audit to NMED.

COMMENT 35: DRAFT PERMIT ATTACHMENT B, PAGE B-24, LINES 33 TO 40

A. Draft Permit Attachment Text

As part of the waste characterization data submittal, the generator site will also transmit the data on a container basis via the WWIS. This data submittal can occur at any time as the data are being collected, but will be complete for each container prior to TRU mixed waste shipment. The system will conduct internal limit checks as the data are entered, and the data will be available to the Permittees for review as supporting information for Waste Stream Profile Form review. NMED will have unlimited read-only access to the WWIS. The initial Waste Stream Profile Form check performed by the Permittees will include WWIS data and raw data.

B. Discussion of Draft Permit Condition

The NMED does not need access to the Permittees' WWIS as a condition of this Permit since it is already available. Therefore, this condition should be deleted.

C. Proposed Revision to Draft Permit Condition

1. Attachment B, Page B-24, Lines 33 to 40

The first phase of the waste screening and verification process will occur before TRU mixed waste is shipped to the WIPP facility. Before the Permittees begin the process of accepting TRU mixed waste from a generator/storage site, an initial audit of that site will be conducted as part of the Permittees Audit and Surveillance Program (Permit Attachment B6). The RCRA portion of the generator/storage site audit program will provide on-site verification of characterization procedures, data package preparation, and recordkeeping to ensure that all applicable provisions of the WAP are met. Another portion of the Phase I verification is the waste characterization data review and acceptance by the Permittees as part of the Waste Stream Profile Form approval process. At the WIPP facility, this screening includes verification that all of the required elements of a data package summary report are present (Permit Attachment B3) and that the waste characterization data meet acceptance criteria required for compliance with the WAP.

Once a generator/storage site has prepared a QAPjP which includes the applicable provisions of the WAP, it is submitted to the Permittees for review and approval (see Permit Attachment B5). Once approved, a copy of the QAPjP is provided to NMED for examination upon request, as specified in Permit Attachment B5. The generator/storage site will implement the QAPjP once it is approved.

When the required waste stream characterization data are collected by a generator/storage site and the initial site audit is completed, the generator/storage Site Project Manager can verify that waste stream characterization meets the applicable provisions of the WAP as a part of the Level 2 data verification (Permit Attachment B3). If the waste characterization does not meet the applicable provisions of the WAP, the mixed waste stream cannot be sent to WIPP until those provisions are met. The generator will then complete a Waste Stream Profile Form and submit it to the Permittees, along with the accompanying waste

characterization documentation for that waste stream. All data necessary to check to accuracy of the Waste Profile Form (i.e. raw data used to compile the form) will be transmitted to the Permittees with the Waste Stream Profile Form for verification by the Permittees. Data will be entered into the WWIS and available to the Permittees for checking the accuracy of the Waste Stream Profile Form. The waste Stream Profile form provides notification that the generator considers that the waste stream, identified by the waste stream identification number, has been adequately characterized for disposal. The Permittees will compare EPA hazardous waste code(s) assigned to, and waste materials observed in, containers analyzed subsequent to submittal and approval of the Waste Stream Profile Form with characterization information presented on the relevant Waste Stream Profile Form. If this comparison indicates that analyzed containers have hazardous wastes not present on the Waste Stream Profile Form, or a different Waste Matrix Code applies, the waste will be redefined to a separate waste stream and a new Waste Stream Profile Form submitted (if not already submitted). Refer to Section B-4b(1)(ii) for detail regarding ongoing Waste Stream Profile Form examination.

The Waste Stream Profile Form is provided as Figure B-1. It includes information on the generator/storage site name and EPA identification number, the technical contact for information on that waste stream, the WIPP ID, Summary Category Group, listing of acceptable knowledge documentation used, and waste characterization data package identification numbers associated with that waste stream. The form also requires the date of site certification for that waste stream, procedures used for characterization, and EPA Hazardous Waste Code designations. Upon the Permittees' approval of the TRU mixed waste stream for disposal, the generator may begin shipping waste containers from that waste stream.

As part of the waste characterization data submittal, the generator/storage site will also transmit the data on a container basis via the WWIS. This data submittal can occur at any time as the data are being collected, but will be complete for each container prior to TRU mixed waste shipment. The system will conduct internal limit checks as the data are entered, and the data will be available to the Permittees for review as supporting information for Waste Stream Profile Form review. NMED will have unlimited read-only access to the WWIS. The initial Waste Stream Profile Form check performed by the Permittees will include WWIS data <u>and</u> associated data packages if they were requested.

COMMENT 36: DRAFT PERMIT ATTACHMENT B, PAGE B-24, LINES 41 TO 42 AND PAGE B-25, LINES 1 TO 5

A. Draft Permit Attachment Text

If discrepancies arise as a result of the Phase I review, the generator sites will be contacted by WIPP Waste Operations and required to provide the necessary additional information to resolve the discrepancy before that waste stream is approved for disposal at the WIPP facility. If the discrepancy is not resolved, the waste stream will not be approved. The Permittees will notify NMED in writing of any waste discrepancies and resulting discrepancy resolution prior to waste shipment. The Permittees will not accept the waste stream until this discrepancy is resolved in accordance with this WAP.

B. Discussion of Draft Permit Condition

The notification requirements of this provision are burdensome and unnecessary. If the Permittees identify a discrepancy during the Phase I review, which is conducted prior to waste shipment to the WIPP, that discrepancy must be resolved prior to mixed waste shipment. Documented resolutions of any discrepancies will be available during audits for the NMED to inspect for compliance with the Permit conditions.

The Draft Permit allows the NMED to cite potential violations of the permit with a review of every discrepancy no matter how small, and regardless of whether the discrepancy had any effect on a waste shipment. The notification requirements should therefore be deleted.

C. Proposed Revision to Draft Permit Condition

1. Attachment B, Page B-24, Lines 41 to 42 and Page 25, Lines 1 to 5

If discrepancies arise as a result of the Phase I review, the Permittees will contact the generator site and require the site to provide the necessary additional information to resolve the discrepancy before that mixed waste stream is approved for disposal at the WIPP facility. If the discrepancy, in accordance with the Permittees' QA program, is not resolved, the waste stream will not be approved. The Permittees will not accept the waste stream until this discrepancy is resolved in accordance with this WAP.

COMMENT 37: DRAFT PERMIT ATTACHMENT B PAGE B-26, LINES 24 TO 39 AND PAGE B-27, LINES 1 TO 22

A. Draft Permit Attachment Text

Members of the WIPP Waste Operations section will be responsible for the verification of completeness and accuracy of the Waste Stream Profile Form. This verification will consist of a review of the Waste Stream Profile Form by the Environmental Compliance and Support section and the Quality Assurance department. These groups will review the Waste Stream Profile Form based on their area of responsibility. The assignment of the waste stream description, Waste Matrix Code Group, and Summary Category Groups; the results of waste analyses; the acceptable knowledge documentation; the methods used for characterization; the WAC certification, and appropriate designation of EPA hazardous waste code(s) will be examined. If the Waste Stream Profile Form is inaccurate, efforts will be made to resolve discrepancies by contacting the generator site. If discrepancies in the waste stream are detected at the generator site, the site will implement a non-conformance program to identify, document, and report discrepancies (Permit Attachment B3). The Waste Stream Profile Form shall pass all verification checks by the Permittees in order for the waste stream to be approved for shipment to the WIPP facility. The Waste Stream Profile Form check against waste container data will occur during the initial Waste Stream Profile Form approval process, and will also be done for every container shipped to WIPP. Waste data transferred via WWIS after Waste Stream Profile Form Approval will be compared with the approved Waste Stream Profile Form. Any container with a hazardous waste stream description different from its Waste Stream Profile Form will not be shipped to WIPP.

The EPA hazardous waste codes for the wastes that appear on the Waste Stream Profile Form will be compared to those in the Permittees' RCRA Part A Permit Application (Permit Attachment O) to ensure that only wastes that contain constituents contained in the Part A are approved for shipment to the WIPP. Every analytical data package summary will be reviewed by the Permittees to verify that the waste has been classified correctly. The analytical method used will be compared to those listed in Tables B-3, B-4, and B-5 to assure that only approved analytical methods were used for analysis of the waste. Waste Operations will verify that WAC certification has been met by the generator.

Environmental Compliance and Support will verify three different types of data related to the WAP are on every container holding TRU mixed waste before a shipment leaves the generator site for the WIPP facility. The three verifications will be performed on data from the following determinations: 1) an assignment of the waste stream's waste description (by Waste Matrix Codes) and Waste Matrix Code Group; 2) a determination of ignitability, reactivity, and corrosivity; and 3) a determination of compatibility. The verification of waste stream description will be performed by reviewing the waste characterization data package for consistency in the waste stream description. The data package will also indicate if the waste has been checked for the characteristics of ignitability, corrosivity, and reactivity. The final verification of waste compatibility will be performed using Appendix C1 of the

WIPP RCRA Part B Permit Application (DOE, 1997), the compatibility study.

B. Discussion of Draft Permit Condition

The process for verifying Waste Stream Profile Forms and evaluating the consistency of waste container data with approved waste stream descriptions needs to be clarified. Under the system set forth in the Application, verification of characterization data against the waste stream description is done on a lot basis (rather than on a container basis) by the generator/storage site. Only summary information such as the EPA hazardous waste codes may be checked on a container basis. Waste with characterization results inconsistent with approved waste stream descriptions will be redefined into a separate waste stream and a new Waste Stream Profile Form submitted. Waste Stream Profile Form resubmittals may result if calculations or other errors related to the initial data set are detected.

C. Proposed Revision to Draft Permit Condition

1. Attachment B, Page B-26, Lines 24 to 39 and Page B-27, Lines 1 to 22

The Permittees will examine the Waste Stream Profile Form. The assignment of the waste stream description; Summary Category Groups; the results of waste analyses; the acceptable knowledge results; the methods used for characterization; and appropriate designation of EPA hazardous waste code(s) will be examined. If the Waste Stream Profile Form is inaccurate, efforts will be made to resolve discrepancies by contacting the generator/storage site. If discrepancies in the waste stream are detected at the generator/storage site, the site will implement a non-conformance program to identify, document, and report discrepancies (Permit Attachment B3). The Waste Stream Profile Form verification checks must be satisfactory in order for the waste stream to be approved for shipment to the WIPP facility. The Waste Stream Profile Form check against waste container data will occur during the initial Waste Stream Profile Form approval process.

The Permittees will compare the EPA hazardous waste codes for the wastes that appear on the Waste Stream Profile Form to those in the Permittees' RCRA Part A Permit Application (Permit Attachment O) to ensure that only wastes that contain constituents identified in the Part A are approved for shipment to the WIPP. Analytical data package summaries will be reviewed by the Permittees to verify that the waste has been classified correctly. The analytical method used will be compared to those listed in Tables B-3, B-4, and B-5 to assure that only approved analytical methods were used for analysis of the waste. The Permittees will verify that the generator site has been granted authority.

The Permittees will verify three different types of data related to the WAP for every container holding TRU mixed waste before a shipment leaves the generator/storage site for the WIPP facility. The three verifications will be performed on data from the following determinations: 1) an assignment of the waste stream's waste description; 2) a determination of ignitability, reactivity, and corrosivity; and 3) a determination of compatibility.

COMMENT 38: DRAFT PERMIT ATTACHMENT B, PAGE B-30, LINES 1 TO 16

A. Draft Permit Attachment Text

Discrepancies will be identified during manifest examination and container bar-code WWIS data comparison. A manifest discrepancy is a difference between the quantity or type of hazardous waste designated on the manifest and the quantity or type of hazardous waste the WIPP facility actually receives. The generator site technical contact (as listed on the manifest) will be contacted to resolve the discrepancy. If the discrepancy is identified prior to the containers being removed from the TRUPACT-II, the waste will be retained in the parking area. If the discrepancy is identified after the waste containers are removed from the TRUPACT-II, the waste will be retained in the Waste Handling Building (WHB) until the discrepancy is resolved. Errors on the manifest can be corrected by the WIPP facility with a verbal (followed by a mandatory written) concurrence by the generator site technical contact. All discrepancies will be reported to the NMED in writing within fifteen (15) days of receiving the waste. Notifications to the NMED will consist of a letter describing the discrepancies, discrepancy resolution, and a copy of the manifest. If the manifest discrepancies have not been resolved within thirty (30) days of waste receipt, the shipment will be returned to the generator/storage facility. If it becomes necessary to return waste containers to the generator site, the Permittees will complete the Uniform Hazardous Waste Manifest to indicate a discrepancy.

B. Discussion of Draft Permit Condition

The condition is more stringent than the provisions of 20 NMAC 4.1.500 § 264.72(b). Under that regulation only discrepancies that are not resolved within 15 days must be reported to the NMED. There is no justification or legal basis offered to support the more stringent requirement in the Draft Permit. Therefore the regulatory language should be used.

C. Proposed Revision to Draft Permit Condition

1. Attachment B, Page B-30, Lines 1 to 16

*Discrepancies will be identified during manifest examination and container bar-code WWIS data comparison. A manifest discrepancy is a difference between the quantity or type of hazardous waste designated on the manifest and the quantity or type of hazardous waste the WIPP facility actually receives. The generator site technical contact (as listed on the manifest) will be contacted to resolve the discrepancy. If the discrepancy is identified before containers are removed from the TRUPACT-II, the waste will be retained in the parking area. If the discrepancy is identified after the waste containers are removed from the TRUPACT-II, the waste will be retained in the Waste Handling Building (**WHB**) until the discrepancy is resolved. Errors on the manifest can be corrected by the WIPP facility with a verbal (followed by a mandatory written) concurrence by the generator site technical contact. The NMED will be notified of all discrepancies not resolved within 15 days of receipt. Notifications to the NMED will consist of a letter describing the discrepancies, discrepancy resolution, and a copy of the manifest. If the manifest discrepancies have not been resolved within thirty (30) days of waste receipt, the shipment will be returned to the*

generator/storage site.

COMMENT 39: DRAFT PERMIT ATTACHMENT B1, PAGE B1-1, LINES 3 TO 15

A. Draft Permit Attachment Text

All headspace-gas sampling will be performed on waste containers that are in compliance with the container equilibrium requirements (i.e. 72 hours at room temperature) within a radiation containment area (e.g., glovebox or hot/warm cell). All waste containers designated as summary category S5000 (Debris waste) shall be sampled a minimum of 142 days after packaging and all waste containers designated as summary categories S3000 (Homogenous solids) and S4000 (Soil/gravel) shall be sampled a minimum of 225 days after packaging. This drum age criteria is to ensure that the drum contents have reached 90 percent of steady state concentration within each layer of confinement (Lockheed, 1995). The configuration of the containment area and remote-handling equipment at each sampling facility are expected to differ. A description of the containment area and remote-handling equipment must be provided in the site quality assurance project plan (QAPjP) for each generator/storage facility. Headspace-gas samples will be analyzed for the analytes listed in Table B3-2 of Permit Attachment B3.

B. Discussion of Draft Permit Condition

This requirement addresses compliance with conditions for use of TRUPACT-II shipping containers and is not relevant to compliance with applicable hazardous waste regulations. Therefore, the condition should be deleted

C. Proposed Revision to Draft Permit Condition

1. Attachment B1, Page B1-1, Lines 3 to 15

Delete this paragraph.

2. Attachment B, Page B-13, Lines 9 to 14

Delete this paragraph.

COMMENT 40: DRAFT PERMIT ATTACHMENT B1, PAGE B1-2, LINES 4 TO 9

A. Draft Permit Attachment Text

The manifold shall also be equipped with a purge assembly that allows applicable QC samples to be collected through the entire manifold, from the needle tip through all of the same manifold components that the drum headspace gas passes through. Field blanks shall be samples of room air collected in the sampling area in the immediate vicinity of the waste container to be sampled. If using SUMMA® canisters, field blanks shall be collected directly into the canister, without the use of the manifold.

B. Discussion of Draft Permit Condition

The Draft Permit should only specify sampling equipment criteria that affect performance in meeting program requirements. For example, pressure regulators may be used to control field reference gases rather than flow-indicating devices. Similarly, the size and length of tubing or drum punch design may vary with no impact to data quality. Sites should be allowed to demonstrate through operational tests and QC sample performance that the equipment meets the performance criteria.

The Permittees originally included details of a specific sampling system when the Method Manual was provided as guidance to the sites. Since that time, methods have become mandatory and many of the detailed specifications are not appropriate. Because of the wide range of facilities, it is difficult for all equipment to be identically designed. Sampling system design differences do not affect the quality of the data and should not be specified in the Draft Permit.

C. Proposed Revision to Draft Permit Condition

1. Attachment B1, Page B1-2, Lines 4 to 9

The manifold shall also be equipped with a purge assembly that allows applicable QC samples to be collected through all sampling components that may affect compliance with the QAOs. Sites shall demonstrate and document the effectiveness of the sampling equipment design in meeting the QAOs.

2. Attachment B1, Page B1-3, Lines 20 to 23

- *A minimum distance, based upon the design of the manifold system, between the tip of the needle and the valve that isolates the pump from the manifold in order to minimize the dead volume in the manifold.*

3. Attachment B1, Page B1-3, Lines 33 to 39, Page B1-4, Lines 1 to 2

- *A cylinder of compressed zero air, helium, argon, or nitrogen gas that is hydrocarbon and carbon dioxide (**CO_2**)-free to clean the manifold between samples and to provide gas for the collection of equipment blanks or on-line blanks. These*

high-purity gases shall be certified by the manufacturer to contain less than one ppm total VOCs. The gases must be metered into the standard side of the manifold by two-stage stainless steel regulators. Alternatively, a zero air generator may be used, provided a sample of the zero air is collected and demonstrated to contain less than one ppm total VOCs.

4. Attachment B1, Page B1-4, Lines 29-35

- *A flow-indicating device or a pressure regulator that is connected downstream of the purge assembly to monitor the flow rate or pressure of gases through the purge assembly. The flow rate through the purge assembly shall be monitored to assure that excess flow exists during cleaning activities and during QC sample collection. Maintaining excess flow will prevent ambient air from contaminating the QC samples and allow samples of gas from the compressed gas cylinders to be collected near ambient pressure.*

5. Attachment B1, Page B1-7, Lines 5 to 32

Sampling through the drum lid shall be performed when the drum's carbon-composite filter does not permit insertion of the side-port needle or for drums that do not include a carbon-composite filter. To sample the drum headspace-gas through the drum lid, the lid shall be breached using an appropriate punch. The punch shall form an airtight seal between the drum lid and the manifold or direct canister. To assure that the sample collected is representative, all of the general method requirements, sampling apparatus requirements, and QC requirements specified in EPA's Compendium Method TO-14 (EPA 1988) as appropriate, shall be met in addition to the following requirements:

- *The seal between the drum lid and sampling head shall be designed to minimize intrusion of ambient air.*

- *All components of the drum-punch sampling system that come into contact with sample gases shall be purged with humidified zero air, nitrogen, or helium prior to sample collection .*

- *Equipment blanks and field reference standards shall be collected through all the components of the punch that contact the headspace-gas sample.*

- *Pressure shall be applied to the punch until the drum lid has been breached.*

- *Provisions shall be made to relieve potential drum pressure increases during drum-punch operations; pressure increases may occur during sealing of the drum punch to the drum lid.*

- *The lid of the drum's 90-mil poly liner shall contain a hole for venting to the drum. A representative sample cannot be collected until the poly-liner has been vented to the drum. If headspace-gas samples are collected prior to venting the 90-mil poly liner, the sample is not acceptable and a nonconformance report shall be prepared, submitted, and resolved. Nonconformance procedures are outlined in Permit Attachment B3.*

- *During sampling, the drum's filter, if present, shall be sealed to prevent outside air from entering the drum.*

6. Attachment B1, Page B1-8, Lines 5 to 9

- *A flow-indicating device to verify excess flow of QC gases (for system purge) shall be pneumatically connected downstream of the drum punch and operated in the same manner as the flow-indicating device or pressure regulator described above in Section B1-1a(1).*

COMMENT 41: DRAFT PERMIT ATTACHMENT B1, PAGE B1-7, LINES 33 TO 34

A. Draft Permit Attachment Text

- ***Samples for containers subject to visual examination shall be conducted in the inner most non-rigid polyliner layer that has a minimum of 1 liter of headspace*.**

B. Discussion of Draft Permit Condition

The Draft Permit makes reference to inner layer headspace gas sampling during visual examination. However, the Draft Permit does not describe how these data will be used to protect human health and the environment. The collection of these inner layer data will not increase protection of human health and the environment because VOC emissions that will take place at the WIPP are a result of VOC diffusion through the drum filter from the container headspace.

The concentration limits listed in Table B-2 of Permit Attachment B are based on the rate of diffusion of VOCs from the container headspace and health-based concentration limits outside of the containers. To ensure that human health and the environment are protected from the VOC emissions, the Draft Permit requires headspace gas samples to be taken from all drums and that the results of the analysis demonstrate that the drums meet the concentration levels specified in Table B-2 of Permit Attachment B prior to disposal at the WIPP.

Therefore, sampling the container headspace is fully protective of human health and the environment and any additional sampling of inner layers during visual examination is unnecessary.

C. Proposed Revision to Draft Permit Condition

1. Attachment B1, Page B1-7, Lines 33 to 34

Delete this condition.

2. Attachment B3, Page B3-4, Lines 31 to 35 and Page B3-5, Lines 1 to 4

Rewrite this condition as follows:

For those containers selected for headspace gas sampling, the sample will be taken from the headspace of the container of transuranic (TRU) mixed waste.

COMMENT 42: DRAFT PERMIT ATTACHMENT B1, PAGE B1-15, LINES 7 TO 26

A. Draft Permit Attachment Text

- ***Samples of homogenous solids and soil/gravel for VOC analyses shall be collected prior to extruding the core from the liner. Three samples will be collected from the vertical core. The sampling locations shall be randomly selected within three equal-length subsections of the one along the long axis of the liner and access to the waste shall be gained by making a perpendicular cut through the liner and the core. Sites shall develop documented procedures to select, and record the selection, of random sampling locations. True random sampling involves the proper use of random numbers for identifying sampling locations. The procedures used to select the random sampling locations will be subject to review as part of annual audits by the Permittees. A sampling device such as the metal coring cylinder described in EPA's SW-846 Manual (1996), or equivalent, shall be immediately used to collect a 15-gram sample once the core has been exposed to air. Immediately after sample collection, the samples shall be extruded into 40-mL volatile organics analysis (VOA) vials, the top rim of the vials visually inspected and wiped clean of any waste residue, and the vial caps secured. Sample handling requirements are outlined in Table B1-4. Additional guidance for this type of sampling can be found in SW-846 (EPA 1996). Each of the three samples will be analyzed, with the calculated mean concentration of each analyte will be considered the analyte concentration for that container.***

B. Discussion of Draft Permit Condition

The permit cannot alter the regulatory criteria in 20 NMAC 4.1.300 § 262.11 and 20 NMAC 4.1.300 applicable to hazardous waste determinations, and should not modify the sampling and analysis procedures specified in EPA's SW-846 Manual for making these determinations. The permit does not apply to non-mixed wastes, and therefore it must carefully distinguish between the use of sampling procedures to determine whether a waste stream is a mixed waste. The use of sampling procedures to further characterize waste streams already known to be mixed. Then provisions regarding waste characterization should be interpreted as only guidance for determining whether a waste stream is mixed. In addition, the provisions regarding mixed waste characterization should be consistent with EPA's requirement for and guidance on sampling procedures found in documents such as its SW-846 Manual.

The suggested strategy is apparently an attempt to account for vertical variability in concentrations within containers. However, the variability that is important to capture with sampling is that within a mixed waste stream, not the waste container. The waste stream variability is incorporated into the upper confidence limit (UCL) for the mean concentration in the waste stream, which is used to characterize the waste stream as a whole. Characterization is not defined on the basis of individual waste containers. It should be noted that the variability in contaminant concentrations in the waste stream is accounted for by statistically determining the number of samples to collect from the waste stream and collecting the samples from random locations. These random

locations may be in different vertical positions from container to container; the estimate of variability that results essentially includes the variability within containers. The requirement to collect and analyze three samples per core is excessive because it results in the analysis of three times the number of samples that are required based on statistical sampling protocols. Furthermore, the additional samples, because of the container averaging requirement, provide no benefit with regard to determining the UCL.

Because of the change to the sampling requirement for VOC analyses, the sampling requirement for semi-volatile organic compound, polychlorinated biphenyls, and metals analyses becomes ambiguous. The sampling requirement for semi-volatile organic compound, polychlorinated biphenyls, and metals analyses states that samples may be collected from the same location and in the same manner as the sample(s) collected for VOC analysis, or they may be collected by splitting or compositing the representative subsection of the core. The former implies that three samples must be chosen because three are required for VOC analysis in the Draft Permit; however, the wording is unchanged from the Permit Application where one sample was required. The option of compositing a representative subsection of the core has been made unclear with the statement "The representative subsection is chosen by randomly selecting a location along the portion of the core from which the sample was taken (i.e. core length)." It is not clear to what sample the sentence refers nor is it clear whether the subsection is chosen from the length of the core or a portion of the core. These problems can be eliminated with more precise language.

C. <u>Proposed Revision to Draft Permit Condition</u>

1. Attachment B1, Page B1-15, Lines 7 to 43 and Page B1-16, Lines 1 to 2

- *Samples of homogenous solids and soil/gravel for VOC analyses shall be collected prior to extruding the core from the liner. The sampling locations must be randomly selected along the long axis of the liner and access to the waste shall be gained by making a perpendicular cut through the liner and the core. Sites shall develop documented procedures to select, and record the selection, of random sampling locations. True random sampling involves the proper use of random numbers for identifying sampling locations. The procedures used to select the random sampling locations will be subject to review as part of annual audits by the Permittees. A sampling device such as the metal coring cylinder described in EPA's SW-846 Manual (1996), or equivalent, shall be immediately used to collect a 15-gram sample once the core has been exposed to air. Immediately after sample collection, the sample shall be extruded into 40-mL volatile organics analysis (**VOA**) vial, the top rim of the vial visually inspected and wiped clean of any waste residue, and the vial cap secured. Sample handling requirements are outlined in Table B1-4. Additional guidance for this type of sampling can be found in SW-846 (EPA 1996).*

- *Samples of the homogenous solids and soil/gravel for semi-volatile organic compound, polychlorinated biphenyls, and metals analyses shall be collected. These samples may be collected from the same location and in the same manner as the sample(s) collected for VOC analysis, or they may be collected by splitting or compositing the representative subsection of the core. The representative subsection is chosen by randomly selecting a location along the core. Sites shall develop documented procedures to select, and record the selection, of random*

sampling locations. True random sampling involves the proper use of random numbers for identifying sampling locations. The procedures used to select the random sampling locations will be subject to review as part of annual audits by the Permittees . Guidance for splitting and compositing solid materials can be found in SW-846 (EPA 1996). All surfaces of the sampling tools that have the potential to come into contact with the sample shall be constructed of materials unlikely to affect the composition or concentrations of target analytes in the waste (e.g., Teflon®). In addition, all surfaces that have the potential to come into contact with core sample media shall either be disposed or decontaminated according to the procedures found in Section B1-2(b). Sample sizes and handling requirements are outlined in Table B1-4.

2. Attachment B6, Table B6-2, Page B6-44, 2nd Entry

Are procedures documented to ensure that VOC samples are taken prior to extruding the core from the liner and that VOC sample locations on the core are selected randomly along the long axis of the core and that the sample locations are documented? (Section B1-2a(2))

3. Attachment B6, Table B6-2, Page B6-44, 4th Entry

Are procedures documented to ensure that SVOC, Metals, and PCB sample locations on the core are selected randomly along the long axis of the core and that the sample locations are documented? Samples may be collected by splitting or compositing the representative subsection of the core. The representative subsections are chosen by randomly selecting a location along the core . (Section B1-2a(2))

COMMENT 43: DRAFT PERMIT ATTACHMENT B2--GENERAL COMMENT--ON STATISTICAL SAMPLING AND ANALYSIS

A. Discussion

SUMMARY: The Permit cannot alter the regulatory criteria in 40 CFR § 262.11 and 20 NMAC 4.1.300 applicable to hazardous waste determinations, and should not modify the sampling and analysis procedures specified in EPA's SW-846 Manual for making these determinations. The Permit does not apply to non-mixed wastes, and therefore it must carefully distinguish between the use of sampling procedures to determine whether a waste stream is a mixed waste and the use of sampling procedures to further characterize waste streams known to be mixed. The provisions regarding characterization of mixed waste streams should be interpreted as guidance--and only guidance--for determining whether a waste stream is mixed. In addition, the provisions regarding mixed waste characterization should be consistent with EPA's requirements for and guidance on sampling procedures found in documents such as its SW-846 Manual. The changes to methodology for determining the number of samples for retrievably stored homogeneous solids and soil/gravel waste are not justifiable and provide no real benefit in terms of protection of human health or the environment. The imposition of 5% sampling for preliminary sampling overrides the statistical approach being used and is not a method recommended in statistical science or in SW-846. The equation for determining the number of samples to collect and analyze in the Draft Permit leads to estimation of the mean concentration within a wider range of tolerances than with the approach in the Permit Application; the consistent range of +/- 100% of the mean used in the Permit Application will result in conservatively determining a waste stream hazardous when the mean is close to the regulatory threshold rather than increasing the number of samples. Requiring sampling an additional 10% of required number imposes an unjustified burden on sites when the required number must be collected and analyzed regardless of completion requirements.

DETAILED DISCUSSION: The requirement in the Draft Permit essentially imposes a minimum number of preliminary samples, and that minimum is larger than the minimum required for characterization for large waste streams (those with greater than 100 containers). The preliminary estimates are used in an initial determination of the number of samples required for characterization. Because checks of the preliminary estimates are performed after sampling and analysis for characterization is completed (and additional sampling is required when results indicate it is necessary), the requirement for a minimum number of preliminary samples is not needed. Also, preliminary samples may be used to meet characterization requirements under certain conditions, so the imposition of 5 percent sampling for preliminary sampling essentially overrides the statistical approach to determining the number of samples to collect.

The requirement that the preliminary samples be randomly selected is also not necessary. Random selection is preferable so these samples can be included in the final sample, but there is no reason it should be a requirement. William Cochran, an authority on sampling, in his book on statistical sampling, *Sampling Techniques*, sanctions nonrandom pilot sampling: "But often the pilot work is restricted to a part of the population that is convenient to handle or that will reveal the magnitude of certain problems." (p. 80)

Finally, nowhere in SW 846 does it require the preliminary estimates be 5 percent of the population or that the preliminary sample be randomly drawn. Such requirements greatly increase the cost of sampling with no definite benefit. In fact in direct opposition, SW 846 states "Such preliminary estimates, which may be derived from information pertaining to similar wastes, process engineering data, or limited analytical studies, are used to identify the approximate number of samples that must be collected from the waste." (page 11 of chapter 9)

The 5 percent preliminary sampling requirement adds significant costs to sampling and analysis alone. For instance, at INEEL the requirement would increase the number of drums requiring sampling and analysis to increase by approximately 630 drums (estimated to cost over $12.5 million) for a single waste stream.

In the Draft Permit, the equation for determining the number of samples to collect is

$$n = \frac{t^2_{\alpha,n_0-1} s^2}{(RT-\bar{x})^2}$$

Where:

n_0 = the initial number of samples used to calculate the preliminary sample estimate.
n = the calculated number of samples in the preliminary estimate.
t^2 = the 95th percentile for a t distribution with n_0-1 degrees of freedom.
RT = Regulatory Threshold of the contaminant
$\bar{x}$ = the calculated mean

In the Permit Application, the equation for determining the number of samples to collect is

$$n_0 = \frac{(t_{\alpha,n_0-1} s)^2}{(r\bar{x})^2}$$

Where

$t_{\alpha a,n-1}$	=	the 90th percentile of the t distribution with degrees of freedom equal to n - 1
s	=	the preliminary estimate of the standard deviation of the analyte in the waste stream
r	=	the relative error (equal to 1)
$\bar{x}$	=	the preliminary estimate of the mean of the analyte in the waste stream (The number of samples may be subsequently adjusted by the finite population correction factor.)

Aside from the difference in the percentile of the *t* distribution, which reflects performing the comparison of final waste stream statistics to the regulatory threshold at different confidence levels (and is discussed elsewhere), and the degrees of freedom of the *t* distribution, the essential difference in the equations is the division by $RT-\bar{x}$ instead of $\bar{x}$. Of course, for the case of $\bar{x} = ½ RT$, the equations are identical. However, there are important differences when this is not the case.

For a waste stream with standard deviation s and with differences in the *t* distribution percentile aside, the number of containers to sample increases as the denominator becomes smaller. Therefore, when the mean of the waste stream is close to (either greater or less than) the regulatory limit, more samples will be required. The approach offers a way to ensure that the mean is known *very well*, that is, with very high tolerance, around the regulatory threshold; this is a requirement that is *over and above the confidence level*. The result is that more samples are required in order to determine whether or not the waste is hazardous than would otherwise be required in these situations.

Using the equation in the Permit Application, such a phenomenon does not occur, as the approach offers a way to ensure the mean is known within a tolerance of ±100 percent of the mean concentration of the analyte. This approach is not affected by the relationship of the mean to the regulatory threshold, but rather, the level of the mean itself. For example, at levels close to the detection level, the mean will be estimated with higher tolerance than at relatively high levels. However, because the standard deviation typically increases with increases in mean, the number of containers to sample will not necessarily be large for the high tolerance (low mean) situation. The approach accomplishes estimation of the mean within a specified relative error, accounting for variability of the analyte in the waste stream.

The approach in the Draft Permit can lead to sampling to estimate the mean within a wider range of tolerances than with the approach in the Permit Application. That is, $RT-\bar{x}$ may be much smaller than ±100 percent of $\bar{x}$ or it may be much larger, depending on RT and $\bar{x}$. A consistent range of ±100 percent of the mean as the tolerance of interest is adequate and will result in conservatively determining a waste stream hazardous when the mean is close to the regulatory threshold. Increased tolerance unjustifiably increases sampling requirements in order to refine the hazard determination for wastes destined for WIPP. Use of the SW-846 equation may be justified for sampling to determine whether or not a site or waste is hazardous when remediation of a nonhazardous site (or treatment of a nonhazardous waste) would likely be much more costly than increased sampling. Such is not the situation with wastes destined for WIPP.

The requirement in the Draft Permit that the number of samples collected is 110 percent of the calculated required number is an effort to compensate for the completeness requirement of 90 percent. Although the completeness requirement is 90 percent, the calculated number of samples to collect and analyze is also required. As a result, the completeness requirement is essentially overridden. An analogous situation is with headspace gas sampling, for which the completeness requirement is also 90 percent. However, because headspace gas sample analyses are required for each and every container, the completeness requirement is, in effect, 100 percent.

The requirement to collect an additional 10 percent of the required samples adds an

unnecessary cost burden to sampling activities. If additional samples are required (either because of completeness issues or because of recalculations for the required number), they will be collected as needed. Sites may elect to collect additional samples, but this should be an election based on site-specific considerations, not a requirement. For instance, INEEL currently provides for the possibility of resampling by creating set aside stacks of containers.

B. <u>Proposed Revision to Draft Permit Condition</u>

Preliminary estimates will be based on analyses of samples collected from the waste stream, either previously or under the approved characterization program.

The appropriate number of samples to be collected will be determined using the procedure from Cochran (1977) presented in the Permit Application. The required number of samples shall be collected and analyzed, regardless of completeness requirements.

The equation for the observed sample n* is updated to reflect the revised methodology.

Detailed changes are as follows:

1. Attachment B2, Page B2-3, Lines 39 to 42 and Page B2-4, Lines 1 to 7

The sampling and analysis strategy is illustrated in Figure B2-1. Preliminary estimates of the mean concentration and variance of each RCRA regulated contaminant in the waste will be used to determine the number of waste containers to select for sampling and analysis. The preliminary estimates will be made by obtaining a preliminary number of samples from the waste stream or from previous sampling from the waste stream. The applicability of the preliminary estimates to the waste stream to be sampled shall be justified and documented. The preliminary estimates will be determined in accordance with the following equations:

2. Attachment B2, Page B2-4, lines 13-27

Based on the preliminary estimates of $\bar{x}$ and s^2 for each chemical contaminant of concern estimate the appropriate number of samples(n) to be collected for each contaminant using the procedure described in Cochran (1977). As a first approximation, take

$$n_0 = \frac{s^2}{\bar{x}^2 c}$$

where s^2 and $\bar{x}$ are the preliminary estimates for the variance and the mean, and

$$c = \frac{r^2}{t^2_{\alpha, n_0 - 1}}$$

where $t_{\alpha,n0-1}$ is the 90th percentile for a t distribution with n_0-1 degrees of freedom. The parameter r is taken as 1.0, which represents a relative error of 100 percent. This choice of r is made in order to obtain the Type I and Type II error rates. This reduces Equation B2-7 to

$$n_0 = \frac{t^2_{\alpha,n_0-1} s^2}{\bar{x}^2}$$

Because $t_{\alpha,n0-1}$ is dependent on n_0, the calculation procedure is iterative. If the ratio of n_0 to the number of containers in the waste stream, N, is appreciable, the number of samples required may be reduced to

$$n = \frac{n_0}{1 + \frac{n_0}{N}}$$

The effect of the ratio n_o/N on n in Equation B2-10 depends on n_o. Equation B2-10 should be used for cases where it results in a different number of samples from n_o.

The number of samples to be collected will be based upon the largest n calculated for each of the contaminants of concern. The required number of samples shall be collected and analyzed, regardless of completeness requirements.

3. Attachment B2-3, Page B2-5, lines 23 to 32

Upon completion of the required sampling, final mean and variance estimates and the UCL_{90} for the mean concentration for each contaminant shall be determined. The observed sample n shall be checked against the preliminary estimate for the number of samples (n, from n_o or n above) to be collected before proceeding, where n* is:*

$$n^* = \frac{t^2_{\alpha,n^*-1} s_n^2}{\bar{x}_n^2}$$

with Equation B2-10 applied as appropriate. If the observed sample n estimate results in greater than 20 percent more required samples than were originally calculated, then the additional samples required to fulfill the revised sample estimate shall be collected and analyzed. The determination of n* is an iterative process that continues until the difference between n* and the previous sample determination is less than 20 percent.*

COMMENT 44: DRAFT PERMIT ATTACHMENT B3, PAGE B3-4, LINES 22 TO 28

A. Draft Permit Attachment Text

For any nonconformance or failure to meet the QAOs specified in this Waste Analysis Plan (WAP), the Permittees shall receive written notification of the nonconformance with five (5) calendar days of identification of the incident. The Permittees shall also receive a nonconformance report within thirty (30) calendar days of identification of the incident. The Permittees shall require the generator/storage site to implement a corrective action which meets the QAOs specified in this WAP within thirty (30) calendar days of identification of the incident.

B. Discussion of Draft Permit Condition

The issue of nonconformances is confusing as it is written and referred to in the Draft Permit. Section B3-13 appears to contain the general requirements for all noncon-formances with Section B3-1 containing specific requirements for noncon-formances to quality assurance objectives (QAOs), that are in addition to the general requirements listed in B3-13. There are also repeated references to Attachment B3 regarding how to handle nonconformances throughout the Draft Permit. This should be clarified to indicate Section B3-13 of Attachment B3 to avoid any confusion regarding the applicable Section of Attachment B3. In addition, the phrase "nonconformance" and "failure to meet" are redundant. A "failure to meet" QAOs would result in a "noncon-formance to" QAOs, so this redundancy should be removed to avoid confusion.

The nonconformance program was developed to provide a documentable method for dealing with waste/program elements that do not comply with program requirements. A nonconformance being generated is a demonstration that the series of checks and balances in place is working to prevent waste from being incorrectly disposed of at the WIPP. These types of nonconformances (preventing waste from being incorrectly disposed of at the WIPP) should not require direct, immediate intervention from the Permittees. Rather, these types of nonconformances are periodically audited for compliance with the WAP requirements.

However, if a nonconformance documents that waste which has already been accepted at the WIPP for disposal should not have been accepted for disposal at the WIPP facility, direct, immediate intervention by the Permittees should occur. Therefore, rather than tying the specific generator/storage site/Permittee reporting requirements directly to QAO nonconformances, a more general approach should be taken that focuses on nonconformances that indicate waste that has already been accepted at the WIPP for disposal should not have been accepted for disposal the WIPP facility. This methodology should be documented in the general (Section B3-13) requirements for nonconformances, rather than in the Nonconformances to QAOs section.

The data quality objectives (DQOs), not the QAOs, should be used in order to determine if a waste container was incorrectly accepted at the WIPP. With the complex matrices often associated with hazardous and mixed wastes, it is not uncommon to have some matrix spike, surrogate, matrix spike duplicate, or internal standard results outside of the

acceptance criteria (i.e., QAOs). The EPA recognizes in SW-846 that more complex matrices will result in more matrix-related QC samples not meeting the acceptance criteria established for a specific program.

Invalidating or rejecting data in the CLP program is based on how far the QC sample results deviate from the acceptance criteria and the professional judgment of the validator who considers data use. The field sample results must be flagged if the QC samples do not meet the acceptance criteria, but reported and used. A nonconformance for a specific QAO may or may not result in the data not meeting the DQOs (being reported and used). Therefore, it is more reasonable to tie the nonconformance reporting requirement to the DQOs, rather than the QAOs.

In addition, there must be a distinction made between matrix related and nonmatrix related failures to meet QAOs. Non-conformances are not required for matrix related QC samples (e.g., matrix spikes), that do not meet the acceptance criteria (i.e., QAOs), because qualifying flags will be applied to the appropriate data and a discussion of the qualification will be included in the case narrative accompanying each data package in accordance with the requirements of the Permit.

C. <u>Proposed Revision to Draft Permit Condition</u>

1. Attachment B3, Page B3-4, Lines 22 to 28

For any nonconformance to the non-matrix related QAOs specified in this Waste Analysis Plan (WAP), the generator/storage sites shall initiate a nonconformance report. All nonconformance reports are subject to the general identification, documentation, and reporting requirements in Section B3-13 of this Permit Attachment. The Permittees shall review and monitor all nonconformances through the auditing process.

If matrix-related QC samples do not meet QAOs, a nonconformance is not required, because the appropriate qualifying flag will be applied and a discussion of the qualification will be included in the case narrative that accompanies the data package. The data packages, including the assignment of qualifying codes and discussion of the qualification are also reviewed and monitored by the Permittee through the auditing process.

2. Attachment B3, Page B3-29, Lines 4 to 11

The status of work and the WAP activities at participating generator/storage sites shall be monitored and controlled by the Site Project Manager and the Permittees through the identification, documentation, and reporting of nonconformances. Nonconformances and corrective action process specified in this section describe procedures between the Permittees and the generator/storage sites.

3. Attachment B3, Page B3-30, Add Starting at line 15

If a nonconformance documents that waste which has been accepted for disposal at the WIPP does not meet the DQOs as specified in this WAP, the Permittees will be provided written notification of the nonconformance with five (5) calendar days of identification of the incident. The Permittees shall also receive a nonconformance report within thirty (30) calendar days of identification of the incident. The generator/storage site will implement a

corrective action process which meets the DQOs specified in this WAP within thirty (30) calendar days of identification of the incident.

COMMENT 45: DRAFT PERMIT ATTACHMENT B3, PAGE B3-7, LINES 10 TO 22

A. Draft Permit Attachment Text

Sampling precision must be determined by collecting and sampling field duplicates (e.g., co-located cores as described in Permit Attachment B3-2.2) once per sampling batch or once per week during sampling operations, whichever is more frequent. A sampling batch is a suite of homogenous solids and soil/gravel samples collected consecutively using the same sampling equipment within a specific time period. A sampling ba97ch [sic] ***can be up to 20 samples (excluding on exact distributions, and the F-Test is more likely to detect a change in the process.***

The statistical test will involve calculating the variance for co-located cores by pooling the variances computed for each pair of co-located cores. The variance for the waste stream will be computed excluding any data from drums with co-located cores, because the test requires the variance estimates to be independent. All data must be transformed to normality prior to computing variances and performing the test. The test hypothesis is evaluated using the F distribution and the method for testing the difference in variances.

B. Discussion of Draft Permit Condition

The method described in Attachment B3, Page B3-7, Section 3, lines 17-22 is not sensitive and is expected to rarely reject the hypothesis that the co-located core variance is less than the waste stream variance. It was presented as an interim method in the Permit Application, to be replaced as sites obtain sufficient data for control charting, which is the more appropriate and preferred method.

C. Proposed Revision to Draft Permit Condition

1. Attachment B3, Page B3-7, Lines 10 to 22

Replace Attachment B3, Page B3-7, Section 3, lines 10-22 with the following paragraphs from the Permit Application, Pages C8-6 and C8-7:

A sampling batch can be up to 20 samples (excluding field QC samples), all of which must be collected within 14 days of the first samples in the batch. The RPD between co-located samples must be calculated and reported by the Site Project QA Officer.

The recommended method for establishing acceptance criteria for co-located cores is development of control charts for the RPD in the Cores. Control charts will be developed for each constituent and for each waste matrix. Periodically, the control charts will be updated using all available data.

In order to establish acceptance criteria to be used at the beginning of waste characterization activities, the variance between co-located cores will be compared to the variance measured within the waste stream. The interim method is a reasonable approach for evaluating co-located cores.

The statistical test will involve calculating the variance for co-located cores by pooling. The method will be replaced with the control charting method once sufficient data are available.

COMMENT 46: DRAFT PERMIT ATTACHMENT B3, PAGE B3-11, LINES 7 TO 11

A. Draft Permit Module Text

Laboratory completeness shall be expressed as the number of samples analyzed with valid results as a percent of the total number of samples submitted for analysis. Valid results are defined as results that meet all of the Quality Control Criteria specified in Tables B3-2 and B3-3; and meet the detection limit, representativeness, and comparability criteria within this section. Participating laboratories must meet the completeness criteria specified in Table B3-2.

B. Discussion of Draft Permit Condition

The Draft Permit does not allow the DOE to qualify the data based on data use. This is inconsistent with the EPA's SW-846 or USEPA CLP guidelines and is contrary to laboratory practices used in sampling and analyzing environmental samples. The CLP provides very specific guidance for the assignment of qualifying flags. In the introduction portion of the USEPA Contract Laboratory Program National Functional Guidelines, for Inorganic (and Organic) Review, the EPA states "if the nature of the sample itself limits the attainment of specifications, appropriate allowances must be made." Additionally, in Chapter One of SW-846, Section 4.4.6, the EPA recommends that data should be reported in accordance with the requirements of the end-user and that supporting documentation include data qualifiers with appropriate references and narrative on the quality of the results. Thus matrix considerations should be allowed.

With the complex matrices often associated with hazardous and mixed wastes, it is not uncommon to have some matrix spike, surrogate, matrix spike duplicate, or internal standard results outside of the acceptance criteria. The EPA recognizes in SW-846 and the CLP that more complex matrices will result in more matrix-related QC samples not meeting the acceptance criteria established for a specific program. The basis for invalidating or rejecting data in the CLP program is based on how far the QC sample results deviate from the acceptance criteria and the professional judgment of the validator who considers data use. The field sample results must be flagged if the QC samples do not meet the acceptance criteria, but are reported and used. The limits imposed by this provision and Tables B3-2 and B3-3 should be removed.

C. Proposed Revision to Draft Permit Condition

1. Attachment B3, Page B3-11, Lines 7 to 11

Laboratory completeness shall be expressed as the number of samples analyzed with valid results as a percent of the total number of samples submitted for analysis. Valid results include all reported results, including any results that have been reported with qualifying flags and meet the detection limits, calibration, representativeness, and comparability criteria within this section.

2. Attachment B3, Page B3-14, Lines 19 to 24

Laboratory completeness shall be expressed as the number of samples analyzed with valid results as a percent of the total number of samples submitted for analysis. Valid results include all reported results, including any results that have been reported with qualifying flags and meet the detection limits, calibration, representativeness, and comparability criteria within this section.

3. Attachment B3, Page B3-16, Lines 19 to 23

Laboratory completeness shall be expressed as the number of samples analyzed with valid results as a percent of the total number of samples submitted for analysis. Valid results include all reported results, including any results that have been reported with qualifying flags and meet the detection limits, calibration, representativeness, and comparability criteria within this section.

4. Attachment B3, Page B3-20, Lines 16 to 20

QC sample results are within established control limits, and if not, the data have been appropriately qualified. Data outside of established control limits will be qualified appropriate qualifying flag, discussed in the case narrative and will be included in the calculation for completeness.

5. Attachment B3, Page B3-20, After Line 34

Add:

Z- *One or more QC samples do not meet acceptance criteria*.

COMMENT 47: DRAFT PERMIT ATTACHMENT B3, PAGE B3-13, LINES 2 TO 8

A. Draft Permit Attachment Text

For VOC analysis, data generated through analysis of samples from different sites shall be comparable. Comparability will be achieved by using standardized SW-846 sample preparation and methods as specified in the most recent SW-846 update at the time of sample collection and analysis, traceable standards, and by requiring all sites to successfully participate in the PDP. Any changes to SW-846 methodology that results in the elimination of sample preparation or analytical methods must be addressed as a corrective action to address the comparability of data promulgated before and after the SW-846 modification.

B. Discussion of Draft Permit Condition

The requirement to use the most recent SW-846 update at the time of sample collection and analysis is overly restrictive and unnecessary. It is impossible for laboratories to implement a new promulgated method instantaneously. It would require procedures to be reviewed, updated, and approved; a new demonstration of method performance; and training on the new method; not to mention the possible need for new equipment. As long as the program goals are met, the immediate use (i.e., time of sample collection and analysis) of the most recent update is unnecessary and does not improve the quality of the program. Laboratories update during their annual review cycle or when new equipment is purchased. The Draft Permit should reflect flexibility on this point.

C. Proposed Revision to Draft Permit Condition

1. Attachment B3, Page B3-13, Lines 2 to 8

For VOC analysis, data generated through analysis of samples from different sites shall be comparable. Comparability will be achieved by using standardized SW-846 sample preparation and methods, and traceable standards. Generator/storage sites may use the most recent promulgated version of SW-846. Any changes to SW-846 methodology that result in the elimination of sample preparation or analytical methods must be addressed as a corrective action to address the comparability of data collected before and after the SW-846 modification.

2. Attachment B3, Page B3-14, Lines 26 to 32

For SVOC analysis, data generated through analysis of samples from different sites shall be comparable. Comparability will be achieved by using standardized SW-846 sample preparation and methods, and traceable standards. Generator/storage sites may use the most recent promulgated version of SW-846. Any changes to SW-846 methodology that results in the elimination of sample preparation or analytical methods must be addressed as a corrective action to address the comparability of data collected before and after the SW-846 modification.

3. Attachment B3, Page B3-16, Lines 25 to 31

For metals analysis, data generated through analysis of samples from different sites shall be comparable. Comparability will be achieved by using standardized SW-846 sample preparation and methods, and traceable standards. Generator/storage sites may use the most recent promulgated version of SW-846. Any changes to SW-846 methodology that result in the elimination of sample preparation or analytical methods must be addressed as a corrective action to address the comparability of data collected before and after the SW-846 modification.

COMMENT 48: DRAFT PERMIT ATTACHMENT B3, PAGE B3-19, LINES 37 TO 38

A. Draft Permit Attachment Text

[1]***Independent technical review is performed by a competent individual who is not directly responsible for performing the work and does not report directly to the immediate supervisors who are responsible for performing the work being reviewed.***

B. Discussion of Draft Permit Condition

It is outside the NMED's authority to regulate a potential contract laboratory. It is unrealistic to require that an independent technical reviewer report to a supervisor not responsible for the work being reviewed. Laboratories routinely employ numerous technically proficient persons (e.g., equipment operators) that can alternately perform measurements or review the work of other technical staff. The fact that the independent technical reviewer reports to the same supervisor will not compromise the quality of the data. In addition, the redundant data review, validation, and verification required by the Draft Permit ensures that any mistakes made at one point in the review cycle will be noted at a different point in the review cycle. Therefore, requirement is unnecessary.

C. Proposed Revision to Draft Permit Condition

1. Attachment B3, Page B3-19, Lines 37 to 38

Delete the footnote on this page.

2. Attachment B, Page B-22, Lines 30 to 40

Delete the footnote on this page.

COMMENT 49: DRAFT PERMIT ATTACHMENT B3, PAGE B3-20, LINES 16 TO 20

A. Draft Permit Attachment Text

- ***QC sample results are within established control limits, and if not, the data have been appropriately qualified. Data outside of established control limits are subject to non-conformance and will be qualified as rejected "R" and will not be included in the valid data completeness calculations*.**

B. Discussion of Draft Permit Condition

Nonconformances should be reported on a periodic basis rather than after each individual event and are reported at the generator/storage site level, and monitored through the auditing process by the Permittee. The Permittees are informed and aware of significant issues identified during generator/storage site characterization activities. Individual event notification, report preparation, and corrective action are appropriate at the generator/storage site level, with all nonconformances, corrective actions, and trending information being reported to and monitored by the Permittees through the auditing process. Nonconformances should not be required for matrix related QC samples (i.e., matrix spikes), that do not meet the acceptance criteria because qualifying flags will be applied to the appropriate data and a discussion of the qualification will be included in the case narrative accompanying each data package. The Draft Permit requirement is excessive, adds more paperwork, and does not benefit data quality.

C. Proposed Revision to Draft Permit Condition

1. Attachment B3, Page B3-20, Lines 16 to 20

QC sample results are within established control limits, and if not, the data have been appropriately qualified. Data outside established control limits will be qualified with the appropriate qualifying flag, discussed in the case narrative, and will be included in the calculation for completeness.

COMMENT 50: DRAFT PERMIT ATTACHMENT B4--GENERAL COMMENT--NRC/EPA GUIDANCE

A. Discussion

The Nuclear Regulatory Commission and the Environmental Protection Agency encourage the use of acceptable knowledge to characterize waste streams that are so heterogeneous that it is difficult if not impossible to obtain representative samples. See Joint NRC/EPA Guidance on Testing Requirements for Mixed Radioactive and Hazardous Waste, 62 FR 62079 (Nov. 20, 1997) These agencies also encourage the use of acceptable knowledge in order to avoid exposing workers to radiation from collecting and analyzing samples of radioactive wastes.

Two conditions in Attachment B4 apply to the characterization of heterogeneous TRU mixed waste steams. The Draft Permit attachment as written does not reflect that the primary use of acceptable knowledge is to determine whether a heterogeneous waste stream is mixed, rather than to characterize waste streams that have already been determined to be mixed. The permit does not apply to non-mixed wastes; thus, the permit must carefully distinguish between the use of acceptable knowledge to determine whether a waste stream is mixed, and the use of acceptable knowledge to characterize waste streams known to contain substances regulated by RCRA and the HWA.

B. Proposed Revision to Draft Permit Condition

1. Attachment B4, Page B4-1, Lines 1 to 11

*The Resource Conservation and Recovery Act (**RCRA**) regulations codified in 40 CFR Parts 260 through 265, 268, and 270, and the New Mexico Hazardous Waste Management Regulations in Title 20 New Mexico Administrative Code, Chapter 4, Part 1, (20 NMAC 4.1) Subparts I through VI, Subpart VIII, and Subpart IX, authorize the use of acceptable knowledge (**AK**) in appropriate circumstances by waste generators, or treatment, storage, or disposal facilities to make hazardous waste determinations. For radioactive heterogeneous waste streams, the EPA and the Nuclear Regulatory Commission encourage the use of acceptable knowledge to determine whether such waste streams are hazardous waste because: (1) it is difficult if not impossible to obtain representative samples of such waste streams; and (2) even if it were possible to obtain such samples, collecting and analyzing them exposes workers to radiation unnecessarily (NRC/EPA, 1997). Although the permit cannot alter the regulatory criteria in 40 CFR 262.11 and 20 NMAC 4.1.300 for making hazardous waste determinations, it can and should reflect the guidance the EPA and the NRC have developed on how these determinations shall be made for radioactive waste streams in the Permit's provisions regarding the characterization of mixed waste streams. In other words, the provisions regarding characterization of mixed waste streams should be interpreted as guidance for determining whether a waste stream is mixed. Acceptable knowledge is also described in Waste Analysis: EPA Guidance Manual for Facilities That Generate, Treat, Store and Dispose of Hazardous Waste (EPA, 1994).*

2. Attachment B4, Page B4-4, Add Before Line 20

TRU waste sites may use acceptable knowledge alone to make a determination not only of the hazardous constituents present in a waste stream but also the maximum concentration of contaminants for the toxicity characteristic in waste streams in situations where sufficient information exists to support the determination. Examples of sufficient information include, mass balance calculations using known constituent concentrations in feedstocks to calculate the maximum possible concentrations of the constituents in the final waste; existing data from past TCLP analysis; total constituent analysis; calculations of the maximum constituent concentrations possible based on the waste's chemical or physical properties; or other relevant information about the processes and materials produced in the waste. An assessment of the TRU waste generator site's application of this information in the acceptable knowledge program will be made as part of the Permittees' audit and surveillance program.

COMMENT 51: DRAFT PERMIT ATTACHMENT B4, PAGE B4-3, LINES 22 TO 24

A. Draft Permit Attachment Text

Any retrievably stored heterogenous Debris Waste stream (Summary Category S5000) shall be reclassified and managed as a newly generated waste stream if all required acceptable knowledge information is not available.

B. Discussion of Draft Permit Condition

Reclassifying and managing retrievably stored heterogeneous debris waste streams as newly generated waste streams may not be the appropriate corrective action if acceptable knowledge is not available. The Permit should allow a generator/storage site to determine if the missing acceptable knowledge can be obtained by visual examination. If not, managing the waste as newly generated may only cause additional radiation exposure to workers without obtaining the required information or providing any additional protection to human health or the environment.

C. Proposed Revision to Draft Permit Condition:

1. Attachment B4, Page B4-3, Lines 22 to 24

Delete these lines.

COMMENT 52: DRAFT PERMIT ATTACHMENT B4, PAGE B4-3, LINES 25 TO 32

A. Draft Permit Attachment Text

The acceptable knowledge written record shall include a summary that identifies all sources of waste characterization information used to delineate the waste stream. The basis and rationale for delineating each waste stream, based on the parameters of interest, shall be clearly summarized and traceable to referenced documents. Assumptions made in delineating each waste stream also shall be identified and justified. If discrepancies exist between required information, then sites shall apply all hazardous waste codes indicated by the information to the subject waste stream. The Permittees shall obtain from each site, at a minimum, procedures that comply with the following acceptable knowledge requirements:

B. Discussion of Draft Permit Condition

The Draft Permit should be clarified to ensure that generator/storage sites do not use incorrect information to characterize hazardous waste streams, which would be contrary to RCRA and HWA regulations. The required process for assembling acceptable knowledge information involves (1) assembling and evaluating adequacy and relevance of available information, (2) compiling relevant and adequate information in an auditable record, (3) resolving and documenting discrepancies within the auditable record.

C. Proposed Revision to Draft Permit Condition

1. Attachment B4, Page B4-3, Lines 25 to 32

The acceptable knowledge written record shall include a summary that identifies all sources of waste characterization information used to delineate a mixed waste stream. The basis and rationale for delineating each mixed waste stream, based on the parameters of interest, shall be clearly summarized and traceable to referenced documents. Assumptions made in delineating each waste stream also shall be identified and justified. If discrepancies exist as to information in the auditable record that cannot be resolved by assessing the accuracy, adequacy or relevance of the conflicting information generator/storage sites apply all appropriate hazardous waste codes indicated by the information to the subject waste stream as described in Section B4-3b. The Permittees shall obtain from each generator/storage site, at a minimum, procedures that comply with the following acceptable knowledge requirements:

COMMENT 53: DRAFT PERMIT ATTACHMENT B4, PAGE B4-4, LINES 20 TO 33, PAGE B4-5, LINES 1 TO 28, AND PAGE B4-6, LINES 25 TO 29

A. <u>Draft Permit Attachment Text</u>

The Permittees shall obtain supplemental acceptable knowledge information from the sites, and shall use this information to compile the acceptable knowledge written record. Supplemental acceptable knowledge documentation that shall be used (if available) in addition to the required information specified above include, but are not limited to, the following information:

- ***Process design documents (e.g., Title II Design)***
- ***Standard operating procedures that may include a list of raw materials or reagents, a description of the process or experiment generating the waste, and a description of wastes generated and how the wastes are managed at the point of generation***
- ***Preliminary and final safety analysis reports and technical safety requirements***
- ***Waste packaging logs***
- ***Test plans or research project reports that describe reagents and other raw materials used in experiments***
- ***Site databases (e.g., chemical inventory database for Superfund Amendments and Reauthorization Act Title III requirements)***
- ***Information from site personnel (e.g., documented interviews)***
- ***Standard industry documents (e.g., vendor information)***
- ***Previous analytical data relevant to the waste stream, including results from fingerprint analyses, spot checks, or routine verification sampling***
- ***Material Safety Data Sheets, product labels, or other product package information***
- ***Sampling and analysis data from comparable or surrogate waste streams (e.g., equivalent nonradioactive materials)***
- ***Laboratory notebooks that detail the research processes and raw materials used in an experiment***

All specific, relevant supplemental acceptable knowledge documentation, whether it supports or contradicts any required acceptable knowledge documentation, shall be identified and an explanation provided for its use (e.g., identification of a toxicity

characteristic). Supplemental documentation is required, if available, and shall be used to further document the rationale for the hazardous waste designations. Similar to required information, if discrepancies exist between supplemental information and the required information, then sites shall apply all hazardous waste codes indicated by the supplemental information to the subject mixed waste stream. For example, if personnel interviews indicate that lead was part of the input materials, then D008 shall be designated in spite of the fact that no records of the use of lead exist in the required documentation. Sites shall prioritize the sources of information used to assign hazardous waste codes in terms of accuracy of the information. Published documents and controlled databases are considered the most reliable information. Second priority will be given to unpublished data, internal procedures, and notes. Correspondence, such as memoranda, letters, telephone logs, and interviews are considered less reliable. The pages from large documents, such as safety analysis reports, shall be flagged with the relevant information noted.

Sites shall develop and implement a written procedure to compile the required acceptable knowledge record. The procedure shall describe that sites shall assemble and evaluate available documentation in the following priority: a) relevant information from published documents and controlled databases, b) unpublished data, internal procedures and notes, such as log books, and c) correspondence, such as memoranda, letters, telephone logs, and interviews.

B. <u>Discussion of Draft Permit Condition</u>

The list of supplemental information sources is not complete and will vary by generator/storage site, and process. The list of supplemental information was provided as an example of potential sources of acceptable knowledge information that may be considered by a generator/storage site to characterize mixed waste streams. By establishing a specific list of supplemental information, the permit prevents generator/storage sites from identifying from identifying and using other, more relevant sources of information. The goal is to have the generator/storage i, sites focus on known credible sources of information to document acceptable knowledge. In addition, due to the nonuniformity of the site specific acceptable knowledge information, it is not practical to establish a general prioritization scheme for that information.

C. <u>Proposed Revision to Draft Permit Condition</u>

1. Attachment B4, Page B4-4, Lines 19 to 33 and Page B4-5, Lines 1 to 28

The generator/storage sites may obtain supplemental acceptable knowledge information, and use this information to compile the acceptable knowledge written record. Supplemental acceptable knowledge documentation that may be used (if available) in addition to the required information specified above includes, but is not limited to, the following information:

- *Process design documents (e.g., Title II Design)*
- *Standard operating procedures that may include a list of raw materials or reagents, a description of the process or experiment generating the waste, and a description of wastes generated and how the wastes are managed at the point of generation*

- *Preliminary and final safety analysis reports and technical safety requirements*
- *Waste packaging logs*
- *Test plans or research project reports that describe reagents and other raw materials used in experiments*
- *Site databases (e.g., chemical inventory database for Superfund Amendments and Reauthorization Act Title III requirements)*
- *Information from site personnel (e.g., documented interviews)*
- *Standard industry documents (e.g., vendor information)*
- *Previous analytical data relevant to the waste stream, including results from fingerprint analyses, spot checks, or routine verification sampling*
- *Material Safety Data Sheets, product labels, or other product package information*
- *Sampling and analysis data from comparable or surrogate waste streams (e.g., equivalent nonradioactive materials)*
- *Laboratory notebooks that detail the research processes and raw materials used in an experiment*

Relevant supplemental acceptable knowledge documentation, whether it supports or contradicts any required information or documentation, should be identified and an explanation provided for its use (e.g., identification of a toxicity characteristic). Supplemental documentation is not required unless needed to further document the rationale for the hazardous waste designations. Similar to required information, if discrepancies exist between supplemental information and the required information, then generator/storage sites shall apply all hazardous waste codes indicated by the supplemental information to the subject mixed waste stream, as appropriate. For example, if personnel interviews indicate that lead was part of the input materials, then D008 shall be designated in spite of the fact that no records of the use of lead exist in the required documentation.

2. Attachment B4, Page B4-6, Lines 24 to 29

Sites shall develop and implement a written procedure to compile the required acceptable knowledge record.

COMMENT 54: DRAFT PERMIT ATTACHMENT B4, PAGE B4-6, LINE 11

A. <u>Draft Permit Attachment Text</u>

- ***Nonconformance process, including discrepancy resolution and reporting***

B. <u>Discussion of Draft Permit Condition</u>

Discrepancies in acceptable knowledge information are documented and resolved in accordance with site-specific procedures for assembling, evaluating and confirming acceptable knowledge information, not nonconformance report (NCR) procedures. The procedures are established to ensure any discrepancies are identified and the resolution documented in the auditable acceptable knowledge record. The use of the NCR process is redundant and unnecessary for compliance with the WAP requirements.

C. <u>Proposed Revision to Draft Permit Condition</u>:

1. Attachment B4, Page B4-6, Line 11

- *Discrepancy resolution and reporting process*

2. Attachment B4 Page B4-11, Lines 8 to 11

- *If discrepancies exist in the acceptable knowledge information for the reassigned Waste Matrix Code, document the segregation of this container and the resolution of the discrepancies.*

COMMENT 55: DRAFT PERMIT ATTACHMENT B4, PAGE B4-7, LINES 1 to 13

A. Draft Permit Attachment Text

- ***Sites shall prepare and implement a written procedure to evaluate acceptable knowledge and resolve discrepancies. If different sources of information indicate different hazardous wastes are present, then sites shall include all sources of information in its records and conservatively assign all potential hazardous waste codes. Discrepancies in acceptable knowledge documentation shall be resolved by including all available information in the auditable records and assigning all hazardous waste codes indicated by all of these records to the subject waste. For example, if one record indicates that solvents were not part of a process, while another record indicates that 1,1,1-trichloroethane was used for cleaning parts, then the F001 hazardous waste code shall be applied to the waste. No judgments may be made regarding the quality of the required documentation, and the assignment of hazardous waste codes shall be tracked to all required documentation.***

- ***Sites shall prepare and implement a written procedure in compliance with Section B4-3(d) to identify hazardous wastes and assign the appropriate hazardous waste codes to each waste stream. For newly generated wastes, procedures shall be developed and implemented to make hazardous waste determinations using acceptable knowledge prior to packaging the waste.***

- ***Sites shall develop and implement a written procedure for the confirmation of acceptable knowledge in accordance with Section B4-3(d).***

B. Discussion of Draft Permit Condition

Hazardous waste determinations are the responsibility of the waste generator and are not subject to the permitting requirements of RCRA or the HWA. However, the following comment is made with regard to mixed waste characterization. The Draft Permit should be clarified so that the generator/storage sites will not use incorrect information to characterize hazardous waste, which would be contrary to RCRA regulations. The required process for assembling acceptable knowledge information involves (1) assembling and evaluating adequacy and relevance of available information, (2) compiling relevant and adequate information in an auditable record, (3) resolving and documenting discrepancies within the auditable record. The condition to make no judgments regarding the required information applies only when discrepancies between conflicting pieces of information that are accurate and relevant cannot be resolved.

During the first step, sites must document the origin and any limitations associated with the information. As part of this process, sites must identify and document incorrect information to ensure that erroneous information is not included in the auditable record. Information is also prioritized to assess the defensibility of the required information. Prioritizing information provides a justification for its use as well as indicating if additional information may be necessary to defend the use of acceptable knowledge for waste characterization and determinations.

After all of the available information has been assembled and evaluated, it is compiled in an auditable record. Finally, discrepancies in the auditable record are identified and resolved as specified in the WAP by conservatively assigning hazardous waste codes, as necessary. This provision should therefore reflect these aspects of the process.

C. <u>Proposed Revision to Draft Permit Condition</u>

1. Attachment B4, Page B4-7, Lines 1 to 20

- *The Permittees shall require the generator/storage sites to prepare and implement a written procedure to evaluate relevant and accurate acceptable knowledge that is assembled in an auditable record and explain how any discrepancies are resolved. If different sources of information in the auditable record indicate different hazardous waste are present, then generator/storage sites include all potential hazardous waste codes. Discrepancies in the auditable record shall not be resolved by making judgements regarding the quality of the available relevant and correct information, but by assigning hazardous waste codes indicated by all these records.*

- *Sites shall prepare and implement a written procedure in compliance with Section B4-3(d) to confirm hazardous wastes characterization and assign the appropriate hazardous waste codes to each mixed waste stream.*

COMMENT 56: DRAFT PERMIT ATTACHMENT B4, PAGE B4-7, LINES 21-24

A. Draft Permit Attachment Text

Sites shall develop and implement a written procedure that describes the waste certification program and ensures unacceptable wastes (e.g., reactive, ignitable, corrosive) are identified and segregated from certifiable TRU mixed waste populations.

B. Discussion of Draft Permit Condition

Generator/storage sites are required to prepare a written procedure to identify hazardous wastes, assign appropriate hazardous waste codes, and confirm AK with sampling and analysis data. The requirement to provide a cross reference between the applicable summary category group and the confirmation data is confusing and unnecessary.

C. Proposed Revision to Draft Permit Condition

1. Attachment B4, Page B4-7, Lines 21-24:

Delete the bullet.

COMMENT 57: DRAFT PERMIT ATTACHMENT B4, PAGE B4-7, LINES 25-39 AND PAGE B4-8, LINES 1-10

A. Draft Permit Attachment Text

Review the required information to determine if the waste may contain hazardous constituents included in the toxicity characteristics specified in 20 NMAC 4.1.200 (incorporating 40 CFR §261), Subpart C. If a toxicity characteristic contaminant is identified and is not included as a listed waste, assign the toxicity characteristic code. Unless data is available from the sampling and analysis of a representative sample of the waste stream that demonstrates that the concentration of the constituent in the waste is less than the toxicity characteristic regulatory level, no judgement may be made regarding the concentration of the constituent. When analytical data is not available, the toxicity characteristic hazardous waste code for the identified hazardous constituent shall be applied to the waste stream.

B. Discussion of Draft Permit Condition

As noted above, the Draft Permit cannot not alter the regulatory requirements for making hazardous waste determinations. At most, the Permit can provide guidance for making these determinations, and should refer explicitly to the EPA and the NRC' joint guidance as well. As this guidance points out, it is appropriate for waste generators to use acceptable knowledge to make determinations on whether the concentration of a toxicity characteristic code exceeds regulatory levels. Such a determination can be made using process knowledge, material analysis, total waste analysis, "fingerprint" analysis, other information about the materials and processes that generated the waste or other relevant information.

C. Proposed Revision to Draft Permit Condition

1. Attachment B4, Page B4-7, Lines 25 to 39 and Page B4-8, Lines 1 to 10

Review the required information to determine if the waste may contain hazardous constituents included in the toxicity characteristics specified in 20 NMAC 4.1.200 (incorporating 40 CFR §261), Subpart C. If a toxicity characteristic contaminant is identified and is not included as a listed waste, assign the toxicity characteristic code unless data are available that demonstrates that the concentration of the constituent in the waste is less than the toxicity characteristic regulatory level. When data are not available, the toxicity characteristic hazardous waste code for the identified hazardous constituent shall be applied to the mixed waste stream.

2. Attachment B4, Page B4-10, Lines 18 to 29

Potential toxicity characteristics for base materials that compose TRU mixed heterogeneous debris (S5000) waste are determined using acceptable knowledge and without destructive sampling and analysis. Sites will assign to each container to a waste stream using acceptable knowledge. Radiography or visual examination is used to confirm the waste stream identified using acceptable knowledge. Procedures describe how discrepancies in

the waste stream are recorded and how additions to hazardous waste codes based on material composition are documented, as necessary (Section B4-3b). If a mixed waste stream must be assigned to a different Waste Matrix Code based on radiography or visual examination, the following minimum steps shall be taken to reevaluate acceptable knowledge:

COMMENT 58: DRAFT PERMIT ATTACHMENT B4, PAGE B4-11, LINES 16 TO 22

A. Draft Permit Attachment Text

Sites shall use acceptable knowledge to identify spent solvents associated with each TRU mixed waste stream or waste stream lot. Headspace-gas data will be used to confirm acceptable knowledge concerning the presence or absence of F-listed solvents. Sites shall provide documentation to support any determination that organic constituents are associated with packaging materials or other uses not consistent with solvent use. If the source of the detected solvents can not be identified, the appropriate spent solvent hazardous waste code will be conservatively applied to the waste stream.

B. Discussion of Draft Permit Condition

This condition should not be applied to hazardous waste determinations and is inconsistent with the use of the PRQL and UCL permitted by the provision at lines 29-36 on this page of the Draft Permit. If acceptable knowledge establishes that spent solvents were not discarded in the waste stream, the appearance of minute quantities of constituents below the PRQL for those constituents should not be used as a basis for assigning an F-listed hazardous waste code to a waste stream. A number of the F-listed spent solvents are constituents in products that are not solvents. Toluene, for example, is used as a plasticizer in plastics and tapes and can be released from these products by radiolytic degradation or other processes. As long as the levels are below PRQLs, generators should have no obligation to assign an F-listed to the waste stream.

C. Proposed Revision to Draft Permit Condition

1. Attachment B4, Page 4-11, Lines 16 to 22

Sites shall use acceptable knowledge to identify spent solvents associated with each TRU mixed waste stream or mixed waste stream lot. Headspace-gas data may assist in confirming acceptable knowledge concerning the presence or absence of F-listed solvents for hazardous waste determinations. The Permittees shall require generator sites to provide documentation to support any determination that organic constituents are associated with packaging materials or other uses not consistent with solvent use. If levels of potential F-listed solvents are below the PRQLs, the waste codes for these solvents should not be assigned to the waste stream.

COMMENT 59: DRAFT PERMIT ATTACHMENT B4, PAGE B4-12, LINES 5 TO 12

A. Draft Permit Attachment Text

To determine the mean concentration of solvent VOCs, all headspace-gas data and solidified waste data for a waste stream or waste stream lot (i.e., the portion of the waste stream that is characterized as a unit) will be used, including data qualified with a 'J' flag (i.e., less than the PRQL but greater than the method detection limit [MDL]) or qualified with a 'U' flag (i.e., undetected). For data qualified with a 'U' flag, sites shall use one-half the MDL in calculating the mean concentration. Because listed wastes are not defined based on concentration, sites may not remove hazardous waste codes assigned using acceptable knowledge if hazardous constituents are not detected in the headspace.

B. Discussion of Draft Permit Condition

This permit condition should not be applied to hazardous waste determinations and is inconsistent with the allowed segregation procedure established by lines 1-4 on this page of the Draft Permit and with the use of the PRQL and UCL methodology established by the provision at lines 29-36 on Page B4-11 of the Draft Permit.

C. Proposed Revision to Draft Permit Conditions

1. Attachment B4, Page B4-12, Lines 5 to 12

*To determine the mean concentration of solvent VOCs, all headspace-gas data and solidified waste data for a mixed waste stream or mixed waste stream lot (i.e., the portion of the waste stream that is characterized as a unit) is used, including data qualified with a 'J' flag (i.e., less than the PRQL but greater than the method detection limit [**MDL**]) or qualified with a 'U' flag (i.e., undetected). For data qualified with a 'U' flag, generator/storage sites use one-half the MDL in calculating the mean concentration.*

COMMENT 60: DRAFT PERMIT ATTACHMENT B4, PAGE B4-16, LINES 14 TO 42

A. Draft Permit Attachment Text

Confirmation of acceptable knowledge characterization designations will be accomplished at the site, as stated in Section B4-3(b). In addition and prior to notifying a site that a waste stream can be shipped and accepted at the WIPP facility, the Permittees will review the Waste Stream Profile Forms and associated data packages to ensure that radiography or visual examination, headspace-gas sampling and analysis data, and solidified waste sampling and analysis data confirm hazardous waste determinations made using acceptable knowledge. Sites shall provide all of the required data associated with waste stream characterization, including radiography or visual examination, headspace gas sampling and analysis, and solidified waste sampling and analysis results. In addition, sites will designate the assigned hazardous waste codes for the waste stream on the waste profile form. The data packages will be evaluated as illustrated in Figure B4-2 and compared to the hazardous waste codes specified on the waste stream profile form. The Permittees will review information provided by the sites to ensure that additions to hazardous waste codes are identified and justified based on data and that hazardous waste codes are included in the Part A of the WIPP permit application. As part of the reconciliation of data quality objectives (DQOs) (Permit Attachment B3-11), sites are required to track and report additions to hazardous waste determinations. If data consistently indicates that discrepancies with acceptable knowledge information were identified at the site level (and were subsequently reconciled), the Permittees will require sites to increase sampling, reassess the materials and processes that generate the waste, and resubmit waste stream profile information to reduce the need for reconciliation activities. If the Permittees' review of a waste stream profile form and associated waste characterization data reveal nonconformance with acceptable knowledge requirements, the Permittees shall prohibit shipment of the waste stream to WIPP until corrective action is taken as specified in Permit Attachment B3. Repeated nonconformances by a site in implementing and documenting WAP requirements (Permit Attachment B) will result in the termination of a site's waste characterization and waste certification authority by the Permittees. Waste characterization and certification authority will not be reinstated by the Permittees until the site demonstrates all corrective actions have been implemented and the program is reassessed by the Permittees.

B. Discussion of Draft Permit Condition

The appropriate action for correcting discrepancies in acceptable knowledge information that a site consistently identifies depends upon, among other things, the waste, type of discrepancy and any previous resolutions. This provision obligates the Permittees to require the generator/storage sites to increase sampling, reassess the materials and processes that generate the waste, and resubmit the Waste Stream Profile Form if discrepancies are consistently identified. This single approach may not necessarily be the appropriate corrective action, in all instances. This provision should reflect more flexibility.

C. <u>Proposed Revision to Draft Permit Condition</u>

1. Attachment B4, Page B4-6, Lines 14 to 42

*Confirmation of acceptable knowledge characterization designations will be accomplished at the generator/storage site, as stated in Section B4-3(b). In addition and prior to notifying a generator/storage site that a waste stream can be shipped and accepted at the WIPP facility, the Permittees will review the Waste Stream Profile Forms and confirm hazardous waste determinations made using acceptable knowledge. Generator/storage sites shall provide all of the required data associated with waste stream characterization, including radiography or visual examination, headspace gas sampling and analysis, and solidified waste sampling and analysis results. In addition, generator/storage sites will designate the assigned hazardous waste codes for the waste stream on the Waste Stream Profile Form. The data packages will be evaluated as illustrated in Figure B4-2 and compared to the hazardous waste codes specified on the Waste Stream Profile Form. The Permittees will review information provided by the generator/storage sites to ensure that additions to hazardous waste codes are identified and justified based on data and that hazardous waste codes are included in the Part A of the WIPP permit application. As part of the reconciliation of data quality objectives (**DQOs**) (Permit Attachment B3-11), generator/storage sites are required to track and report additions to hazardous waste determinations. If data consistently indicate that discrepancies with acceptable knowledge information were identified at the generator/storage site level and were subsequently reconciled, the Permittees will require generator/storage sites to reassess the materials and processes that generate the waste, resubmit waste stream profile information, and implement their corrective action system. If the Permittees' review of a Waste Stream Profile Form and associated waste data reveal nonconformance with acceptable knowledge requirements, the Permittees shall prohibit shipment of the waste stream to WIPP until corrective action is taken as specified in Permit Attachment B3. Consistent repeated nonconformances by a generator/storage site in implementing and documenting the applicable provisions of the WAP (Permit Attachment B) will result in the termination of a generator/storage site's waste characterization and waste certification authority by the Permittees. Waste characterization and certification authority will not be reinstated by the Permittees until the generator/storage site demonstrates all corrective actions have been implemented and the program is reassessed by the Permittees.*

COMMENT 61: DRAFT PERMIT ATTACHMENT B5, PAGE B5-2, LINES 1 TO 33

A. Draft Permit Attachment Text

At a minimum, revisions to QA documents shall be denoted by including the current revision number on the document title page, the revised signature page, and each page that has been revised. Only revised pages need to be reissued. A vertical bar, indicating the change to the text, shall be included along the left-hand margin of the page. Revised document submittals shall also identify the changes, the reason for the changes, and the justification for concluding that the revised contents continue to satisfy the requirements of the quality assurance program.

The QAPP shall be initially reviewed, approved, and concurred with by those positions indicated in Table B5-1 and thereafter reviewed by the NTP team leader at least annually to ensure it addresses the current needs of the waste characterization quality assurance program. If changes to the QAPP are required, the NTP team leader shall be responsible for scheduling and coordinating the review and approval of the revised document. Changes shall be reported by the NTP team leader to the DOE field office managers for notification to the sites. Each site project manager shall be responsible for the revision of the QAPjP and SOPs in accordance with the approved changes to the QAPP. The Permittees shall provide the QAPP and all revisions to NMED upon approval by the Permittees. If NMED finds the QAPP does not meet applicable requirements of the WAP (Permit Attachment B), the Permittees may be in violation of this Permit: That is, the management of unacceptable waste at the facility

Each site shall have a document control system to control the review and approval of controlled documents. The NTP team leader, the applicable DOE field office, the site project manager, and the site project QA officer are responsible for the initial review and approval of the QAPjPs. Thereafter, the QAPjPs shall be reviewed at least annually by the site project manager. If changes to the QAPjP are required, the site project manager shall be responsible for scheduling and coordinating the review and approval of the revised document. The QAPjPs shall include a description of the organization(s) or person(s) responsible for distributing revisions to those plans. The Permittees shall provide the QAPjP for each site and all revisions to NMED upon approval by the Permittees. If NMED finds any QAPjP which does not meet applicable requirements of the WAP (Permit Attachment B), the Permittees may be in violation of this Permit.

B. Discussion of Draft Permit Condition

NMED has authority to take enforcement action if any unacceptable waste as specified in the permit is emplaced at WIPP. NMED states in the permit that the Permittee shall comply with all terms and conditions of the Permit, including the attachments. Speculating on potential violations of the permit is not meaningful or necessary. For example, inconsistencies in documentation should not be the cause for enforcement actions unless they lead emplacement of unacceptable waste at the WIPP.

C. <u>Proposed Revision to Draft Permit Condition</u>

1. Attachment B5, Page B5-2, Lines 1 to 33

At a minimum, revisions to QA documents shall be denoted by including the current revision number on the document title page, the revised signature page, and each page that has been revised. Only revised pages need to be reissued. A vertical bar, indicating the change to the text, shall be included along the left-hand margin of the page. Revised document submittals shall also identify the changes.

2. Attachment B6-1, Page B6-1, Lines 20 to 24

This Permit Attachment describes the relationship between the Permittees and the individual site subject to the audit, and describes the Permittees' discretion in determining how conditions which affect the quality of waste characterization activities will be identified and how those conditions will be remedied in the corrective action process (see Section B6-4).

COMMENT 62: DRAFT PERMIT ATTACHMENT B6, PAGE B6-1, LINES 2 TO 19

A. Draft Permit Attachment Text

The Waste Isolation Pilot Plant (WIPP) Generator Site Waste Screening and Acceptance Audit Program shall ensure that: 1) the operators of each generator/storage site (site) that plan to transport transuranic (TRU) mixed waste to the WIPP facility conduct sampling and analysis of wastes in accordance with the current WIPP Waste Analysis Plan (WAP) (Permit Attachment B), and 2) the information supplied by each site to satisfy the waste screening and acceptability requirements of Section B-4 of the WAP is being managed properly. The Permittees (meaning both the U.S. Department of Energy Carlsbad Area Office [DOE/CAO] and Westinghouse Waste Isolation Division [WID] personnel) will conduct these audits at each site in accordance with a standard operating procedure (SOP). NMED personnel will participate in these audits to validate the implementation of WAP requirements (Permit Attachment B) at each site. The audit SOP will contain steps for selecting audit personnel, reviewing applicable background information, preparing an audit plan, preparing audit checklists, conducting the audit, developing an audit report, and following up audit deficiencies. Checklists used in the audit shall be tailored for each site to be audited, based on the approved site quality assurance project plan (QAPjP), which is the site-specific implementation of the WAP requirements (Permit Attachments B and B5). The checklists developed for each site shall, at a minimum, contain the requirements specified in the checklists found in Table B6-1.

B. Discussion of Draft Permit Condition

The Permittees have developed an extensive and detailed audit and surveillance program. The Permittees review base documents, such as the QAPjPs, for adequacy and completeness prior to their approval. SOPs are also reviewed for adequacy and completeness prior to the audit. Checklists are developed based on the SOPs, not QAPjPs or the QAPP. The checklists are tailored for each generator/storage site. The checklist in Table B6-1 should be deleted for several reasons. This checklist would be an ineffective tool to use to perform any kind of QA audit because many of its questions are redundant and many would not be important or relevant to evaluating a generator's compliance with the permit.

C. Proposed Revision to Draft Permit Condition

1. Attachment B, Page B6-1, Lines 2 to 19

*The Waste Isolation Pilot Plant (**WIPP**) Permittees Audit and Surveillance Program shall be designed to accomplish the following: 1) the operators of each generator/storage site (**site**) that plans to ship transuranic (**TRU**) mixed waste to the WIPP facility will sample and analyze the wastes in accordance with the applicable provisions of the WIPP Waste Analysis Plan (**WAP**) (Permit Attachment B), and 2) ensure that the information supplied by each site to satisfy the waste screening and acceptability requirements of Section B-4 of the WAP is being managed properly. The Permittees will conduct these audits and*

*surveillances at each site in accordance with standard operating procedures (**SOPs**). The NMED may validate the implementation of applicable WAP requirements (Permit Attachment B) at each site. The auditing SOP will contain steps for selecting audit personnel, reviewing applicable background information, preparing an audit plan, preparing audit checklists, conducting the audit, developing an audit report, and following up on audit deficiencies. Checklists used in the audit shall be tailored for each site to be audited, based on the approved site quality assurance project plan (**QAPjP**) and it's implementing SOPs, which are the site-specific implementing documents for the applicable provisions of the WAP (Permit Attachments B and B5).*

COMMENT 63: DRAFT PERMIT ATTACHMENT B6, PAGE B6-1, LINES 2 TO 19

A. Draft Permit Attachment Text

The Waste Isolation Pilot Plant (WIPP) Generator Site Waste Screening and Acceptance Audit Program shall ensure that: 1) the operators of each generator/storage site (site) that plan to transport transuranic (TRU) mixed waste to the WIPP facility conduct sampling and analysis of wastes in accordance with the current WIPP Waste Analysis Plan (WAP) (Permit Attachment B), and 2) the information supplied by each site to satisfy the waste screening and acceptability requirements of Section B-4 of the WAP is being managed properly. The Permittees (meaning both the U.S. Department of Energy Carlsbad Area Office [DOE/CAO] and Westinghouse Waste Isolation Division [WID] personnel) will conduct these audits at each site in accordance with a standard operating procedure (SOP). NMED personnel will participate in these audits to validate the implementation of WAP requirements (Permit Attachment B) at each site. The audit SOP will contain steps for selecting audit personnel, reviewing applicable background information, preparing an audit plan, preparing audit checklists, conducting the audit, developing an audit report, and following up audit deficiencies. Checklists used in the audit shall be tailored for each site to be audited, based on the approved site quality assurance project plan (QAPjP), which is the site-specific implementation of the WAP requirements (Permit Attachments B and B5). The checklists developed for each site shall, at a minimum, contain the requirements specified in the checklists found in Table B6-1.

B. Discussion of Draft Permit Condition

The Draft Permit states that the NMED will "participate" in the audits and surveillances conducted by the Permittees. The Draft Permit does not indicate how the NMED will "participate." This participation should be clarified as to sites that are outside the state of New Mexico. The condition should be revised to say that NMED may "participate as an observer in the audits at DOE sites outside of New Mexico."

C. Proposed Revision to Draft Permit Condition

1. Attachment B6, Page B6-1, Lines 2 to 19

*The Waste Isolation Pilot Plant (**WIPP**) Permittees Audit and Surveillance Program shall ensure that: 1) the operators of each generator/storage site (**site**) that plan to transport transuranic (**TRU**) mixed waste to the WIPP facility conduct sampling and analysis of wastes in accordance with the current WIPP Waste Analysis Plan (**WAP**) (Permit Attachment B), and 2) the information supplied by each site to satisfy the waste screening and acceptability requirements of Section B-4 of the WAP is being managed properly. The Permittees (meaning both the U.S. Department of Energy Carlsbad Area Office [**DOE/CAO**] and Westinghouse Waste Isolation Division [**WID**]) will conduct these audits and surveillances at each site in accordance with a standard operating procedure (**SOP**). The NMED may validate the implementation of WAP requirements (Permit Attachment B) at each site. The audit SOP will contain steps for selecting audit personnel, reviewing*

applicable background information, preparing an audit plan, preparing audit checklists, conducting the audit, developing an audit report, and following up on audit deficiencies. Checklists used in the audit shall be tailored to each site to be audited, based on the approved site quality assurance project plan QAPjP and its implementing SOPs, which are the site-specific implementing documents for the WAP (Permit Attachments B and B5).

2.. Attachment B6, Page B6-5, Lines 11 to 26

When a deficiency is identified by the audit team, the audit team member who identified the condition adverse to quality prepares a CAR and documents the adverse condition. The CAR is then approved by the audit team leader. The Permittees will review the CAR, determine its validity (assesses whether a requirement has in fact been violated), classify the significance of the condition, assign a response due date, and issue the CAR to the generator/storage site. For significant conditions adverse to quality, the site reviews the CAR, evaluates the extent and cause of the deficiency, and provides a response to the Permittees indicating the remedial actions and to avoid recurrence. The Permittees review the response from the generator/storage site and, if acceptable, communicate the acceptance to the generator/storage site. The generator/storage site completes remedial actions and actions to avoid recurrence. After all corrective actions have been completed, the Permittees, shall schedule a generator/storage site visit to verify that corrective actions have been completed and that they effectively address significant conditions adverse to quality. When all actions have been completed and verified as being effective for significant conditions adverse to quality, the CAR is closed by the Permittees. As part of the planning process for subsequent audits and surveillances, past deficiencies are considered and the previous deficient activity or process is subject to reassessment.

COMMENT 64: DRAFT PERMIT ATTACHMENT B6, PAGE B6-2, LINE 13

A. Draft Permit Attachment Text

- ***Track and close all deficiencies and any observations requiring action***

B. Discussion of Draft Permit Condition

The manager who oversees the audit program does not have the responsibility for closing all deficiencies as stated in the Draft Permit. As stated in DOE Order 5700.6C, the Permittees encourage line management to be responsible for achieving and assessing quality. Consequently, several of the Permittees' managers have the responsibility to close a deficiency, depending on its nature. Also, observations are not deficiencies and do not require formal tracking or closure.

C. Proposed Revision to Draft Permit Condition

1. Attachment B6, Page B6-2, Line 13

Delete this condition**.**

COMMENT 65: DRAFT PERMIT ATTACHMENT B6, PAGE B6-4, LINES 34 TO 35 AND PAGE B6-5, LINES 1 TO 10

A. Draft Permit Attachment Text

The site personnel will be given the opportunity to correct any condition that can be corrected during the audit period. Deficiencies and observations will be documented and included as part of the final audit report. Those items that can be resolved during the audit (isolated conditions that do not require a root cause determination or actions to preclude recurrence), will be verified prior to the end of the audit, and so noted in the audit report. Those items that affect the quality of the program, and/or the data generated by that program, which are required by the WAP will be documented on a Corrective Action Report (CAR) and included as a part of the audit report. The CAR will be entered into the Permittees' CAR tracking system and tracked until closure. Also, the Permittees will track RCRA-related items on a separate systematic tracking and action reporting system. CARs identified by the site during self-audits will also be included in the audit report and tracked in the Permittees tracking systems.

B. Discussion of Draft Permit Condition

The Permittees' procedures for audits provide for documentation of items resolved during an audit via the audit checklist as well as the audit report.

C. Proposed Revision to Draft Permit Condition

1. Attachment B6, Page B6-4, Lines 34 to 35 and Page B6-5, Lines 1 to 10

*The generator/storage sites are given the opportunity to correct any condition that can be corrected during the audit period. Deficiencies are included in the final audit report. Those items that have been resolved during the audit (isolated conditions that do not require a root cause determination or actions to avoid recurrence), will be verified prior to the end of the audit, and so noted in the audit report or audit checklist. Those items that affect the quality of the program, which are required by the WAP will be documented on a Corrective Action Report (**CAR**) and included as a part of the audit report. The CAR will be entered into the Permittees' CAR tracking system and tracked until closure. CARs identified by a generator site during self-audits will be evaluated during the Permittees' audit and surveillance program.*

COMMENT 66: DRAFT PERMIT ATTACHMENT B6, PAGE B6-5, LINES 11 TO 41 AND PAGE B6-6, LINES 1 TO 9

A. <u>Draft Permit Attachment Text</u>

When a deficiency is identified by the audit team, the condition shall be documented on a CAR by the audit team leader. The DOE/CAO Quality Assurance (QA) Manager and the National Transuranic Program (NTP) Team Leader, on behalf of the Permittees, review the CAR, determine validity (assures that a requirement has really been violated), classify the significance of the condition, assign a response due date, and issue the CAR to the site. The site reviews the CAR, evaluates the extent and cause of the deficiency, and provides a response to the Permittees indicating the remedial actions and actions taken to preclude recurrence. The Permittees review the response from the site and, if acceptable, communicate the acceptance to the site. The site completes remedial actions and actions to preclude recurrence. After all corrective actions have been completed, the Permittees, with NMED personnel as participants, shall schedule and perform a verification visit to assure that corrective actions have been completed and are effective. When all actions have been completed and verified as being effective, the CAR is closed by the DOE/CAO QA Manager and the NTP Team Leader. As part of the planning process for subsequent audits and surveillances, past deficiencies will be reviewed and the previous deficient activity or process is subject to reassessment.

The site management shall submit a corrective action plan to eliminate the adverse condition stated on the CAR, including a resolution of the acceptability of any data generated prior to the resolution of the corrective action.

The corrective action response will include a discussion of the investigation performed to determine the extent and impact of the deficiency, a description of the remedial actions taken, determination of root cause, and actions to preclude recurrence.

An exit meeting will be conducted by the lead auditor prior to departure of the audit team from the site. This meeting will be with site management personnel, including DOE field office personnel. All draft audit results will be presented to the site management.

The formal final audit report will be prepared, approved, and issued to the site within thirty (30) days of the completion of the audit by the Permittees. NMED shall receive a copy of the final audit report upon issuance. The report will include, as a minimum, sections describing the scope, purpose, summary of deficiencies, and observations in narrative format, as well as an identification of the organization audited, the dates of the audit, and the requested response date. The audited site will respond to any deficiencies and observations within thirty (30) days after receipt of any CARs and indicate the corrective action taken or to be taken. If the corrective action has not been completed, the response must indicate the expected date the action will be completed. Subsequent audits or specific verifications, announced or unannounced, will determine if the corrective action has been satisfactorily implemented.

Deficiencies, observations, and CARs will be tracked to completion according to established procedure(s). In addition, all audit items will be trended to determine if similar situations exist system wide. Trend reports will be issued as necessary to provide a "lessons learned" announcement to other sites who might benefit from program improvements implemented as a result of resolutions to the specific situations discovered at the performance of these audits.

B. <u>Discussion of Draft Permit Condition</u>

DOE Order 5700.6C focuses on significant conditions adverse to quality. In order to clarify how and when a CAR will be fully implemented in accordance with the philosophy of DOE Order 5700.6C, a clarification statement should be added to several areas of these provisions of the Draft Permit.

C. <u>Proposed Revision to Draft Permit Condition</u>

1. Attachment B6, Page B6-5, Lines 11 to 41 and Page B6-6, Lines 1 to 9

When a deficiency is identified by the audit team, the audit team member who identified the condition adverse to quality prepares a CAR and documents the adverse condition. The CAR is then approved by the audit team leader. The Permittees will review the CAR, determine its validity (assesses whether a requirement has in fact been violated), classify the significance of the condition, assign a response due date, and issue the CAR to the generator/storage site. For significant conditions adverse to quality, the site reviews the CAR, evaluates the extent and cause of the deficiency, and provides a response to the Permittees indicating the remedial actions and to avoid recurrence. The Permittees review the response from the generator/storage site and, if acceptable, communicate the acceptance to the generator/storage site. The generator/storage site completes remedial actions and actions to avoid recurrence. After all corrective actions have been completed, the Permittees, shall schedule a generator/storage site visit to verify that corrective actions have been completed and that they effectively address significant conditions adverse to quality. When all actions have been completed and verified as being effective for significant conditions adverse to quality, the CAR is closed by the Permittees. As part of the planning process for subsequent audits and surveillances, past deficiencies are considered and the previous deficient activity or process is subject to reassessment.

The generator/storage sites submit corrective action plans to eliminate adverse condition reported in the CARs, including resolutions regarding the acceptability of data generated prior to the completion of the corrective action.

The corrective action response will include a discussion of the investigation performed to determine the extent and impact of the deficiency, a description of the remedial actions taken, determination of root cause, and actions to avoid recurrence.

An exit meeting will be conducted by the lead auditor prior to departure of the audit team from the generator/storage site. This meeting will include management personnel. All draft audit results will be presented to the generator/storage site management.

The formal final audit report will be prepared, approved, and issued to the site within thirty (30) days of the completion of the audit by the Permittees. NMED shall receive a copy of the final audit report upon issuance. The report will include, as a minimum, sections describing the scope, purpose, summary of deficiencies, and observations in narrative format, as well as an identification of the organization audited, the dates of the audit, and the requested response date. For significant conditions adverse to quality the audited generator/storage site will responds to any deficiencies within thirty (30) days after receipt of any CARs and indicates the corrective action taken or to be taken. If the corrective action has not been completed, the response indicates the expected date the action will be completed. Subsequent audits or specific verifications, announced or unannounced, will determine if the corrective action has been satisfactorily implemented. Deficiencies, observations, and CARs are tracked to completion according to established procedure(s). Generator/storage sites may request information from the Permittees regarding audits of other generator/storage sites at any time.

COMMENT 67: DRAFT PERMIT ATTACHMENT B6, PAGE B6-5, LINES 36 TO 41 AND PAGE B6-6, LINE 1 TO 9

A. Draft Permit Attachment Text

The formal final audit report will be prepared, approved, and issued to the site within thirty (30) days of the completion of the audit by the Permittees. NMED shall receive a copy of the final audit report upon issuance. The report will include, as a minimum, sections describing the scope, purpose, summary of deficiencies, and observations in narrative format, as well as an identification of the organization audited, the dates of the audit, and the requested response date. The audited site will respond to any deficiencies and observations within thirty (30) days after receipt of any CARs and indicate the corrective action taken or to be taken. If the corrective action has not been completed, the response must indicate the expected date the action will be completed. Subsequent audits or specific verifications, announced or unannounced, will determine if the corrective action has been satisfactorily implemented. Deficiencies, observations, and CARs will be tracked to completion according to established procedure(s). In addition, all audit items will be trended to determine if similar situations exist system wide. Trend reports will be issued as necessary to provide a "lessons learned" announcement to other sites who might benefit from program improvements implemented as a result of resolutions to the specific situations discovered at the performance of these audits.

B. Discussion of Draft Permit Condition

Trending and trend reports as required in the Draft Permit will not add any value to the system. Because the processes at each site are generally unique to that site, a trending of audit findings will not be useful. Any site may, however, request information regarding audits at other sites from the Permittees, if the site believes such information would be useful. Therefore, a separate "trend report" is unnecessary and should not be required.

C. Proposed Revision to Draft Permit Condition

1. Attachment B6, Page B6-5, Lines 36 to 41 and Page B6-6, Lines 1 to 9

The formal final audit report will be prepared, approved, and issued to the site within thirty (30) days of the completion of the audit by the Permittees. NMED shall receive a copy of the final audit report upon issuance. The report will include, as a minimum, sections describing the scope, purpose, summary of deficiencies, and observations in narrative format, as well as an identification of the organization audited, the dates of the audit, and the requested response date. For significant conditions adverse to quality the audited generator/storage site will responds to any deficiencies within thirty (30) days after receipt of any CARs and indicates the corrective action taken or to be taken. If the corrective action has not been completed, the response indicates the expected date the action will be completed. Subsequent audits or specific verifications, announced or unannounced, will determine if the corrective action has been satisfactorily implemented. Deficiencies, observations, and CARs are tracked to completion according to established procedure(s). Generator/storage sites may request information from the Permittees regarding audits of other generator/storage sites at any time.

2.2.3 Comments on Attachment C

COMMENT 68: DRAFT PERMIT ATTACHMENT C, PAGE C-2, LINES 1 TO 8

A. Draft Permit Attachment Text

The major duties of the security officers are to control personnel, vehicle, and material access/egress 24 hours per day, 365 days per year. During non-operational hours, the security officers conduct documented security patrols outside of the PPA, at a minimum rate of two per 12-hour shift, as well as inside of the PPA at a rate of one every two hours. In addition to the security officers, WIPP facility employees are called upon to challenge any person in the WIPP facility who is not wearing a badge or who is not under escort when an escort is required. Further physical protection is provided by fences, protective lighting, and locked buildings.

B. Discussion of Draft Permit Condition

This Draft Permit condition is overly specific as far as the number and/or frequency of security patrols. Surveillance or barriers are required, in accordance with 20 NMAC 4.1.500 § 264.14, but not both. Under the very specific terms of the Draft Permit, should a patrol or inspection be missed due to inclement weather, drills, exercises or other emergencies, the failure could be a permit violation. A more realistic approach is to require that missed inspections, or patrols. be documented in the record along with the reason it was missed. This approach poses little risk to a member of the public since there is a permanent chain security barrier around the entire active portion of the facility.

C. Proposed Revision to Draft Permit Condition

1. Attachment C, Page C-2, Lines 1 to 8

The major duties of the security officers are to control personnel, vehicle, and material access/egress 24 hours per day, 365 days per year. During non-operational hours, the security officers conduct documented security patrols outside of the PPA, at a minimum rate of two per 12-hour shift, as well as inside of the PPA at a rate of one every two hours. Whenever scheduled security patrols cannot be made, for situations such as inclement weather or an emergency, the reason for missing the patrol will be documented in the security logbook. Further physical protection is provided by fences, protective lighting, and locked buildings.

2.2.4 Comments on Attachments D and D1

COMMENT 69: DRAFT PERMIT ATTACHMENT D, PAGE D-1, LINES 33 TO 35 AND PAGE D-2, LINES 1 TO 3

A. Draft Permit Attachment Text

Waste handling equipment and area inspections are typically controlled through established logbooks. Operators are trained to consult the logbook to identify the status of any piece of waste handling equipment prior to its use. Once a piece of equipment is identified to be operable, a preoperational inspection is initiated in accordance with the appropriate sheet in Permit Attachment D1. Inspection results as described below are entered in the applicable logbook.

B. Discussion of Draft Permit Condition

The condition results in a requirement that is not common WIPP practice, and is unnecessary. The term "area inspection" is a misnomer because it is non-specific and not controlled by logbooks. The waste handlers, during their preoperational check out of the underground, have a check list item to verify that required inspection of the areas of the mine that will be used for waste management and emplacement have had their required inspections. Waste handlers do not perform these inspections; they simply verify their completion and note the result in the waste handling check sheet. The required inspections are conducted by Mining Operations on the frequency indicated in Table D-1 for underground openings, roof bolts, and travelways. Specific forms are used to document area inspections. For example, see the Underground Openings, Roof bolts, and Travelways Form in Attachment D1.

C. Proposed Revision to Draft Permit Condition

1. Attachment D, Page D-1, Lines 33 to 35 and Page D-2, Lines 1 to 3

Waste handling equipment inspections are typically controlled through established logbooks. Operators are trained to consult the logbook to identify the status of any piece of waste handling equipment prior to its use. Once a piece of equipment is identified to be operable, a preoperational inspection is initiated in accordance with the appropriate sheet in Permit Attachment D1. Inspection results as described below are entered in the applicable logbook.

2. Attachment D, Page D-2, Lines 29 to 42 and Page D-3, Lines 1 to 11

Requirements of 20 NMAC 4.1.500 (incorporating 40 CFR § 264.15(d)), are met by the inspections for each item or system included in Table D-1. The results of the inspections are maintained for at least three years. The inspection logs include the date and time of inspection, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions. Major pieces of waste handling equipment use proceduralized inspections as shown in Permit Attachment D1. The status of these pieces of equipment is maintained in an equipment logbook that is separate from the checklist. The logbook contains information regarding the condition of the equipment,

including the number of any AR that has been prepared for the equipment. Equipment operators are required, by the inspection checklist, to consult the logbook as the first activity in the inspection procedure. This logbook is maintained in the operating record. Equipment that is controlled by a logbook includes the waste handling fork lifts, all waste handling cranes, the adjustable center of gravity lift fixture, the CH transuranic (TRU) underground transporter, the conveyance loading car, the trailer jockey, and the Brudi. In addition to the inspections listed in Table D-1, many pieces of equipment are subject to regular preventive maintenance. This includes more in-depth inspections of mechanical systems, load testing of lifting systems, calibration of measurement equipment and other actions as recommended by the equipment manufacturer or as required by DOE Orders. These preventive maintenance activities along with the inspections in Table D-1 make mechanical failure of waste handling equipment unlikely. The WIPP Safety Analysis Report (DOE, 1995a) contains the results of a systematic analysis of waste handling equipment and the hazards associated with potential mechanical failures. Equipment subject to failures that cannot practically be mitigated is retained for analysis and is the basis for contingency planning. The documents in Permit Attachment D1 are operational and preventive maintenance procedures to assure the equipment is maintained operational.

COMMENT 70: DRAFT PERMIT ATTACHMENT D1

A. Draft Permit Attachment Text

No specific text

B. Discussion of Draft Permit Condition

The DOE has made three changes at the WIPP facility that affect the inspection forms and checklists. These include the addition of another fire hydrant to protect the new warehouse, the addition of a new (upgraded) forklift and push-pull attachment for underground waste emplacement, and the construction of a TDOP Upender, which will be used to overpack SWBs into TDOPs. The upender allows the TDOP to be tipped on its side to allow for easy insertion of the SWB.

C. Proposed Revision to Draft Permit Condition

Add the modified form for fire hydrant inspections and the new forms for the forklift and attachment and the inspection checklists for the TDOP Upender. The forms are attached to these comments and are also included in the redline/strikeout version of the Draft Permit.

2.2.5 Comments on Attachment E

COMMENT 71: DRAFT PERMIT ATTACHMENT E, PAGE E-10, LINES 10 TO 12

A. Draft Permit Attachment Text

In the event that normal utility power is lost, on-site diesel generators will provide alternating current (AC) power to important WIPP facility electrical loads. Uninterruptible power supply (UPS) units are also on line providing power to important monitoring systems.

B. Discussion of Draft Permit Condition

The DOE has arranged with the local electric company to provide more reliable electric power for the operation of the WIPP. The modified text reflects this change.

C. Proposed Revision to Draft Permit Condition

1. Attachment E-2, Page E-10, Lines 10 to 12

*Utility power is fed to the WIPP site by two separate feeds in a ring bus configuration. This provides the capability to supply uninterruptible, redundant power to the site upon the loss of one feed. A redundant Southwestern Public Service (SPS) power feed has been installed. In the event that normal utility power is lost, on-site diesel generators will provide alternating current (**AC**) power to important WIPP facility electrical loads. Uninterruptible power supply (**UPS**) units are also on line providing power to important monitoring systems.*

COMMENT 72: DRAFT PERMIT ATTACHMENT E, PAGE E-11, LINES 18 TO 19

A. Draft Permit Attachment Text

- ***Mine Safety and Health Administration (MSHA) requires personnel evacuation within one hour of ventilation loss)***

B. Discussion of Draft Permit Condition

Section 57.8518(b) of Title 30 of the Code of Federal Regulations does not require personnel evacuation within one hour of ventilation loss. Section 57.8518(b) requires:

> *In the event of main or booster fan failure due to a malfunction, accident, power failure, or other such unplanned or unscheduled event: (1) The air quality in the affected active workings shall be tested at least within 2-hours of the discovery of the fan failure, and at least every 4-hours thereafter by a competent person for compliance with the requirements of the applicable standards of subpart D of this part until normal ventilation is restored, or (2) All persons, except those working on the fan, shall be withdrawn, the ventilation shall be restored to normal and the air quality in the affected active workings shall be tested by a competent person to assure that the air quality meets the requirements of the standards in subpart D of this part, before any other persons are permitted to enter the affected active workings.*

Therefore, the requirement to evacuate the underground within one hour is unnecessary and may cause the DOE to neglect other, more pressing power needs during a power outage.

C. Proposed Revision to Draft Permit Condition

1. Attachment E, Page E-11, Lines 18 to 19

- *Decisions to evacuate underground personnel will be made in accordance with the requirements of the Mine Safety and Health Administration (MSHA).*

2. Attachment F, Page F-15, Lines 12 to 21

Underground Evacuation Warning System

The evacuation signal is a yelp tone and flashing strobe light. In the event of an evacuation signal, underground personnel will proceed to the nearest egress hoist station (Section F-7b) to be apprized of the nature of the emergency and the evacuation route to take. Underground personnel are trained to report to the underground assembly areas and await further instruction if all power fails or if ventilation stops. If evacuation of underground personnel is required, this will done using the backup electric generators and in accordance with the applicable requirements of MSHA.

COMMENT 73: DRAFT PERMIT ATTACHMENT E, PAGE E-14, LINES 15 TO 20

A. Draft Permit Attachment Text

A release of hazardous waste or hazardous constituents to the air that may have adverse effects on human health or the environment is unlikely. Although VOCs could be present in the TRU mixed waste emplaced within the unit and could potentially be a source of release to the air, the confirmatory volatile organic compound monitoring plan described in Permit Attachment N will be used to confirm that there is no adverse effects on human health and the environment.

B. Discussion of Draft Permit Condition

The VOC Confirmatory Monitoring Plan was not developed to perform operational monitoring to confirm whether emissions would have adverse effects on human health or the environment. Instead, it was developed to confirm design parameters related to waste disposal, and to quantify the maximum amounts of VOCs that can be emitted under worst-case conditions. The permittees based their analysis on measured headspace VOC concentrations found in waste containers, which are the only source of VOC emissions from HWDUs. This analysis demonstrated that VOC emissions will not exceed applicable EPA and OSHA exposure limits by one order of magnitude or more, and demonstrated that VOC emissions, if any, will fall below those levels. According to EPA guidance, when compliance is achieved by one order of magnitude or more, there is no need to establish compliance monitoring. Thus, there is no need for the Draft Permit monitoring requirements and the plan's purpose is misstated in the Draft Permit.

Based on the design parameters of waste disposal units, including the parameters relating to Panel Closure and the characteristics of the wastes to be disposed of, it is extremely unlikely that VOC air emissions from hazardous waste or hazardous constituents will have adverse effects on human health or the environment. Although VOCs may be present in the headspace of containers of TRU mixed waste emplaced within a unit, the data suggest that any release to the air outside the disposal unit would be far below levels that can be harmful to human health or the environment.

C. Proposed Revision to Draft Permit Condition

1. Attachment E, Page E-14, Lines 15 to 20

A release of hazardous waste or hazardous constituents to the air that may have adverse effects on human health or the environment is unlikely. The only potential source of airborne releases of hazardous waste or hazardous constituents is from VOCs which may be present in the TRU mixed waste emplaced within the unit. Such releases, however, have been determined to be far below levels that can be harmful to human health or the environment as long as the Permittees comply with the conditions of this permit.

COMMENT 74: DRAFT PERMIT ATTACHMENT E, PAGE E-15, LINES 15 TO 32

A. Draft Permit Attachment Text

Portable air monitoring equipment is used to assure access to all areas where air quality may be of concern. Two types of measuring systems are used at the WIPP: Draeger Pump Systems and Portable Air Monitoring Instruments. Prior to use, all instruments must have certification of current calibration and check gases must also be certified as accurate within one percent of the label concentration. Instruments are used within the guidelines established by the manufacturers and are accompanied with suitable temperature, barometric and relative humidity measurements (as required). Functional testing of instruments must be done before each use and the results must fall within the ranges specified in air monitoring procedures. Gases that are to be tested include oxygen, methane, carbon monoxide, hydrogen sulfide, sulphur dioxide, nitrogen dioxide, and chlorine. Alarm levels are set for each gas as follows: O_2: 19.5% LOW; 23.0% HIGH; CH_4: 0.25%; CO: 25 ppm; H_2S: 10 ppm; SO_2: 2 ppm; NO_2: 1 ppm; Cl_2: 0.5 ppm. When alarm levels are reached either engineering controls, administrative action to return the atmosphere to a safe condition, or PPE is required. Equipment operation is by trained personnel only, or under the supervision of trained personnel. Air Quality sampling is performed as often as needed to assure safe working conditions. If conditions are worsening, or action has been taken to mitigate high levels of contamination, the frequency of measurement is increased. Underground air quality is checked at the beginning of the day when personnel are underground.

B. Discussion of Draft Permit Condition

The set points for the monitored gases are for information only. These points are occasionally adjusted to accommodate changes in the MSHA limits for these gases. The Draft Permit should be revised to provide the flexibility to adjust these without having to seek a permit modification each time. Furthermore, when an alarm level is reached, Industrial Safety is notified so that appropriate action can be identified and implemented.

C. Proposed Revision to Draft Permit Condition

1. Attachment E-2, Page E-15, Lines 15 to 32

Portable air monitoring equipment is used to assure access to all areas where air quality may be of concern. Two types of measuring systems are presently used at the WIPP: Draeger Pump Systems and Portable Air Monitoring Instruments. Prior to use, all instruments must have certification of current calibration and check gases must also be certified as accurate within one percent of the label concentration. Instruments are used within the guidelines established by the manufacturers and are accompanied with suitable temperature, barometric and relative humidity measurements (as required). Functional testing of instruments must be done before each use and the results must fall within the ranges specified in air monitoring procedures. Gases that are to be tested include oxygen,

methane, carbon monoxide, hydrogen sulfide, sulphur dioxide, nitrogen dioxide, and chlorine. Alarm levels are set as appropriate for each gas. Typical settings are as follows: O_2: 19.5% LOW; 23.0% HIGH; CH_4: 0.25%; CO: 25 ppm; H_2S: 10 ppm; SO_2: 2 ppm; NO_2: 1 ppm; Cl_2: 0.5 ppm. When alarm levels are reached, Industrial Safety is contacted to evaluate the conditions and to determine the appropriate actions. Equipment operation is by trained personnel only, or under the supervision of trained personnel. Air Quality sampling is performed as often as needed to assure safe working conditions. If conditions are worsening, or action has been taken to mitigate high levels of contamination, the frequency of measurement is increased. Underground air quality is checked at the beginning of the day when personnel are underground.

2.2.6 Comments on Attachment F

COMMENT 75: DRAFT PERMIT ATTACHMENT F, PAGE F-6, LINES 17 TO 30

A. Draft Permit Attachment Text

The maximum processing rate for CH waste is 14 TRUPACT-IIs per day. Two shifts per day are planned; four days per week. The fifth day is for equipment maintenance with weekends available for more extensive maintenance, when necessary.

Once unloaded from the TRUPACT-IIs, CH waste containers (7-packs or SWBs) are placed in one of two positions on the facility pallet. The 7-packs or SWBs are stacked, as they arrive in the TRUPACT-II, on the facility pallets (one- or two-high, depending on weight considerations). The use of facility pallets will elevate the waste approximately 6 inches (in.) (15 centimeters [cm]) from the floor surface. Pallets of waste will then be relocated to the northeast area of the CH bay for normal storage. This storage area will be clearly marked to indicate the lateral limits of the storage area. This storage area will have a maximum capacity of seven facility pallets of waste during normal operations. These pallets will typically be staged in this area for a period of one to four days.

In addition, four TRUPACT-IIs, containing up to eight 7-packs or SWBs, may occupy the staging positions at the TRUPACT-II Unloading Docks (TRUDOCK).

B. Discussion of Draft Permit Condition

There are several clarifications needed with regard to the handling of CH TRU mixed waste. First, the typical processing rate for TRUPACTs is approximately 14 per day. The maximum would be approximately 28 per day. This should be allowed in case the WIPP suffers an equipment breakdown that requires multiple shifts to work off a backlog of TRUPACTs. The Permittees need the flexibility to manage the facility to meet throughput requirements. This may include working, for a short duration, 24 hour/day and weekends if necessary. Second, the section should add TDOPs as waste containers since they are WAC-approved and NRC-approved shipping containers. Third, the section should delete any reference to weight dependent pallet stacking . A TRUPACT load is placed on a facility pallet position regardless of weight. Finally, the section should be revised to clarify that up to 4 TDOPs can be stored in the TRUDOCK area.

C. Proposed Revision to Draft Permit Condition

1. Attachment F, Page F-6, Lines 17 to 30

The typical processing rate for CH waste is 14 TRUPACT-IIs per day. The maximum processing rate is approximately 28 TRUPACT-IIs per day. Two shifts per day are currently planned; four days per week. The fifth day is for equipment maintenance with weekends available for more extensive maintenance, when necessary.

Once unloaded from the TRUPACT-IIs, CH waste containers (7-packs, SWBs or TDOPs) are placed in one of two positions on the facility pallet. The 7-packs or SWBs are stacked, as they arrive in the TRUPACT-II, on the pallet. The use of facility pallets will elevate the waste approximately 6 inches (in.) (15 centimeters [cm]) from the floor surface. Pallets of waste will then be relocated to the northeast area of the CH bay for normal storage. This storage area will be clearly marked to indicate the lateral limits of the storage area. This storage area will have a maximum capacity of seven facility pallets of waste during normal operations. These pallets will typically be staged in this area for a period of one to four days.

In addition, four TRUPACT-IIs, containing up to eight 7-packs or SWBs or four TDOPs, may occupy the staging positions at the TRUPACT-II Unloading Docks (TRUDOCK).

2. Attachment M1, Page M1-7, Lines 25 to 28

The typical processing rate for CH TRU mixed waste is 14 TRUPACT-IIs per day, or seven pallet loads and the maximum processing rate is approximately 28 TRUPACT-IIs per day. Two shifts per day are currently planned, four days per week. The fifth day is for equipment maintenance with weekends available for more extensive maintenance, when necessary.

COMMENT 76: DRAFT PERMIT ATTACHMENT F, PAGE F-7, LINES 18 TO 22

A. Draft Permit Attachment Text

Off-normal events could interrupt normal operations in the waste management process line. Shipments of waste from the generator sites will be stopped in any event which results in an interruption to normal waste handling operations that exceeds three days. This will minimize the potential for large quantities of waste requiring storage in the parking area for extended periods of time.

B. Discussion of Draft Permit Condition

It is necessary to clarify the amount of time it will likely take to "shut-off" the flow of waste to the WIPP in the event of an off-normal event. Three days represents the time it will take waste in transit to reach the WIPP where it will be stored if necessary until it can be emplaced. The Permittees do not intend to turn shipments around because they arrive after some self-imposed time limit. This approach should be reflected in this provision.

C. Proposed Revision to Draft Permit Condition

Revise the condition as follows:

1. Attachment F, Page F-7, Lines 18 to 22

Off-normal events may interrupt normal operations in the waste management process line. New waste shipments from the generator sites will be stopped for off-normal events which interrupt normal waste handling operations for more than three days. Three days represents the time it takes waste that is in transit to reach the WIPP facility. The Permittees will not turn around waste already in transit to the WIPP. Shipments in transit at the time of any off-normal event will be received and stored at the WIPP until normal operations resume and the waste can be emplaced. The stoppage of new shipments will minimize the need to store large quantities of waste in the parking area for extended periods of time.

2. Attachment M1, Page M1-7, Lines 35 to 36 and Page M1-8, Lines 1 to 2

Waste shipments from generator sites will be stopped for events interrupting normal waste handling operations for longer than three days. Three days represents the time it takes waste that is in transit to reach the WIPP facility. Permittees will not turn around waste already in transit to the WIPP. Such stoppages will minimize the need to store large quantities of waste in the parking area for extended periods of time.

3. Attachment M1, Page M1-14, Lines 22 to 25

The DOE believes that this strategy minimizes both the amount of shipping that is necessary and the amount of waste handling, while maintaining a reasonable inspection schedule. The DOE will stop new shipments of waste in response to an equipment outage that will extend beyond three days. Three days represents the time it takes waste in transit to reach the WIPP facility. Permittees will not turn around waste already in transit to the WIPP, regardless of how long it takes to arrive there. The stoppage of new shipments will

minimize the need to store large quantities of waste in the parking area for extended periods of time.

COMMENT 77: DRAFT PERMIT ATTACHMENT F, PAGE F-9, LINES 6 TO 15

A. Draft Permit Attachment Text

- ***Emergency Services Technician (EST)—Regular employee whose job is that of full-time emergency responder. The EST acts as incident commander (on-scene coordinator) for all emergency response events. During nonemergency conditions, the EST conducts inspections of facility fire suppression systems, inspects emergency equipment, and trains supplemental emergency responders commensurate with duties to be performed. The EST is responsible for completion of specific sections of the "WIPP Hazardous Material Incident Report." Additional technical personnel complete identified sections of the report.***

B. Discussion of Draft Permit Condition

The DOE has improved emergency management by requiring the RCRA Emergency Coordinator, rather than the Emergency Services Technician, to serve as the incident commander. This improves communication between the emergency responders and the RCRA Emergency Coordinator and relieves the EST of duties that divert his attention from his response activities.

C. Proposed Revision to Draft Permit Condition

1. Attachment F, Page F-9, Lines 6 to 15

- *Emergency Services Technician (EST)-Regular employee whose job is that of full-time emergency responder. During non-emergency conditions, the EST inspects facility fire suppression systems, and emergency equipment, and trains supplemental emergency responders commensurate with duties to be performed. The EST completes specific sections of the "WIPP Hazardous Material Incident Report." Additional technical personnel complete identified sections of the report.*

2. Attachment F, Page F-13, Lines 27 to 33

The EST is also notified in case of fire, explosion, or release. The RCRA Emergency Coordinator, as incident commander, determines if supplemental emergency responders are necessary. Notification of the ERT (surface) is made by using the ERT pagers and/or the public announcement system. Notification of the FLIRT is by using the Mine Page Phone System. If the MRT is needed the RCRA Emergency Coordinator will instruct the CMRO to make a PA announcement for the MRT to assemble in the Mine Rescue Room, located in at a predetermined location.

3. Attachment F, Page F-14, Lines 27 to 39

The EOC staff will assess opportunities for coordination and the use of mutual-aid agreements with local outside agencies making additional emergency personnel and equipment available (Section F-6), as well as the use of specialized response teams available through various State and Federal agencies. As a DOE-owned facility, the WIPP facility may use the resources available from the Federal Response Plan, signed by 27 Federal departments and agencies in April 1987, and developed under the authorities of the Earthquake Hazards Reduction Act of 1977 (42 U.S.C. 7701 et seq.) and amended by the Stafford Disaster Relief Act of 1988. Most resources are available within 24 hours. The WIPP facility maintains its own emergency response capabilities on-site. In addition to the supplemental emergency responders, radiological control technicians, environmental sampling technicians, wildlife biologists, and various other technical experts are available for use on an as-needed basis.

4. Attachment Page F-23, Lines 17 to 21

6. The RCRA Emergency Coordinator maintains overall control of the emergency and may accept and evaluate the advice of the WIPP facility personnel and emergency response organization members, but retains overall responsibility.

5. Attachment F, Page F-24, Lines 21 to 22

3. Injured personnel will be treated and transported as necessary.

6. Attachment F, Page F-34, Lines 1 to 6

Any necessary verification of air, soil, or water samples will be directed by the RCRA Emergency Coordinator. Immediately after an emergency, the RCRA Emergency Coordinator will provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility in accordance with standard operating procedures.

7. Attachment H1, Page H1-12, Lines 6 to 12

Duties:

-Responds to hazardous waste spills in emergency situations
-Provides emergency fire-response services
-Conducts routine inspections and maintains all response equipment on site
-Directs emergency teams to control hazardous situations

COMMENT 78: DRAFT PERMIT ATTACHMENT F, PAGE F-23, LINES 7 TO 16

A. Draft Permit Attachment Text

5. In order to ensure that storm drains and/or sewers do not receive potentially hazardous runoff, dikes will be built around storm drains to control discharge as needed. Collected waste will be sampled and analyzed for hazardous constituents, before being discharged to evaporation ponds. There are two ponds south of the security fence, opposite the WHB Unit, that will collect drainage from the parking area. The rest of the site, inside the security fence, drains to the large pond to the west. Samples will be taken from these ponds, after the emergency has been abated, to determine any cleanup requirements. NMED will approve any procedures associated with the sampling and analysis of the ponds as specified in Permit Module I.

B. Discussion of Draft Permit Condition

The requirements that the NMED approve sampling and analysis plans is not included in Module I of the Draft Permit. Instead, Module I requires certain reporting in conjunction with the implementation of the Contingency Plan. This condition should be changed to reflect reporting instead of approval.

C. Proposed Revision to Draft Permit Condition

1. Attachment F, Page F-23, Lines 7 to 16

5. In order to ensure that storm drains and/or sewers do not receive potentially hazardous runoff, dikes will be built around storm drains to control discharge as needed. Collected waste will be sampled and analyzed for hazardous constituents, before being discharged to evaporation ponds. There are two ponds south of the security fence, opposite the WHB Unit, that will collect drainage from the parking area. The rest of the site, inside the security fence, drains to the large pond to the west. Samples will be taken from these ponds, after the emergency has been abated, to determine any cleanup requirements. The Permittees will describe sampling and analysis plans in the incident report required by Module I of this permit.

2.2.7 Comments on Attachments H, H1 and H2

There are no specific comments on these attachments, however, there are editorial comments, and comments that modify, clarify, or supplement the text in the DOE's Permit Application contained in the Redline/Strikeout version of the Draft Permit.

2.2.8 Comments on Attachments I, I1, I2, and I3

COMMENT 79: DRAFT PERMIT ATTACHMENT I--GENERAL COMMENT--PANEL CLOSURE DESIGN

A. Discussion

In their Application, the Permittees proposed four different Panel Closure Designs, along with the criteria to be used in selecting the optimum design. These four designs were necessitated by the various combinations of conditions that are anticipated to exist at the time panel closure is implemented. The designs ranged from relatively simple concrete barriers for panels with little deterioration of the panel entries and less than twenty years until final facility closure (Design Option A) to robust designs to accommodate entries with a well developed disturbed rock zone (DRZ) and with more than twenty years before final facility closure (Design Option D). The Permittees purposed a graded design approach to allow the emplacement of the minimum panel closure required to meet the performance specifications, thereby facilitating faster and less costly closure for most panels. In the Draft Permit, the NMED has dictated that all panels be closed using the most robust design--Option D. In most cases, this design is excessive for the conditions anticipated. Furthermore, the NMED provides no basis for specifying the sole use of Design Option 4. It simply states that the NMED and the EPA determined that the most robust design would be approved. This determination on the part of the NMED is arbitrary and creates a situation in which the Permittees must seek a modification to the Permit to use a design that is demonstrated in the Application to be adequate. Therefore, the stipulation that only Design Option D be used should be deleted from the permit.

Related to this, the NMED has created an inconsistency in the Draft Permit by first specifying the use of Design Option D and also specifying extensive investigation of the DRZ prior to the emplacement of the panel closure. The WIPP proposed the use of Ground Penetrating Radar and other techniques referenced in these paragraphs as part of the process for choosing a panel closure design option. Since the NMED specified panel closure Option D in all cases, these techniques are unnecessary as the DRZ will be removed under Option D.

In addition, other portions of the Panel Closure Design Report serve no purpose since they were designed to evaluate which closure option to use. The specification of Option D eliminates the need for these evaluations. Therefore, if the NMED removes the stipulation regarding the sole use of Option D then the text regarding DRZ investigation should remain. If, on the other hand, the stipulation regarding the sole use of Option D remains in the Permit, the DRZ investigation is unnecessary and should be deleted.

C. <u>Proposed Revision to Draft Permit Condition</u>

Revise the condition as follows:

1. Attachment I, Page I-11, Lines 22 to 31

Figures I-4 and I-5 show a diagram of the panel closure design and installation envelopes. Permit Attachment I1 provides the detailed design and the design analysis for the panel closure system.

2. Attachment I1, Page I1-5, Lines 1 to 13

Delete this condition if Option D is required in the permit.

3. Attachment I1, Page I1-11, Lines 8 to 38

Delete this condition if Option D is required in the permit.

4. Attachment I1, Page I1-12, Lines 14 to 21

Delete this condition if Option D is required in the permit.

COMMENT 80: DRAFT PERMIT ATTACHMENT I, PAGE I-11, LINES 6 TO 11

A. Draft Permit Attachment Text

The performance standard for air emissions from the WIPP facility is established in Module IV and Permit Attachment M2. These are reiterated in the detailed design report, Permit Attachment I1, Table A-1, as the closed panel release limits. Releases shall be below these limits for the facility to remain in compliance with standards to protect human health and the environment. The following panel closure design has been shown, through analysis, to meet these standards, if emplaced in accordance with the specifications in Permit Attachment I1.

B. Discussion of Draft Permit Condition

The NMED should apply a single performance standard for air which is based on real public risk at the WIPP site boundary, and is consistent with Table A-1 from the Permit Application. The NMED imposes a condition that Table A-1 values, however, must not be exceeded to protect human health and the environment. This table, however, is not attached to the Draft Permit. The Table A-1 values are based on meeting environmental performance standards established for protecting a member of the public at the site boundary. This is the correct standard for the WIPP facility and is consistent with the standards applied to other facilities in the State of New Mexico. However, the performance standards referenced in Module IV (Table IV.D.1 and IV.F.2.c) are inappropriate, and are also inconsistent with Table A-1. It appears that the NMED has imposed three separate performance standards for air that are in conflict.

C. Proposed Revision to Draft Permit Condition

1. Attachment I, Page I-11, Lines 6 to 11

The following panel closure design has been shown, through analysis, to meet the standards listed in Appendix I1, Attachment A, Table A-1 of the permit application if installed in accordance with the specifications in Permit Attachment I1.

COMMENT 81: DRAFT PERMIT ATTACHMENT I, PAGE I-11, LINES 39 TO 40 AND PAGE I-12, LINES 1 TO 2

A. Draft Permit Attachment Text

Decommissioning is the process of removing equipment, facilities, or surface areas from further use and rendering a facility to a final condition. Decommissioning is part of final facility closure only and will involve the removal of equipment, buildings, closure of the shafts, and establishing active and passive institutional controls for the facility.

B. Discussion of Draft Permit Condition

Since Module VI.C of the Draft Permit complies with the applicable regulation (20 NMAC 4.1.500, § 264.117(a)(1)) and mandates a 30-year post-closure care period, there should be no condition pertaining to passive institutional controls which will be enacted after the post-closure care period ends.

C. Proposed Revision to Draft Permit Conditions

1. Attachment I, Page I-11, Lines 39 to 40 and Page 1-12, Lines 1 to 2

Decommissioning is the process of removing equipment, facilities, or surface areas from further use and closing the facility.

COMMENT 82: DRAFT PERMIT ATTACHMENT I, PAGE I-19, LINES 2 TO 7

A. Draft Permit Attachment Text

A record of the WIPP Project shall be listed in the public domain in accordance with the requirements of 20 NMAC 4.1.500 (incorporating 40 CFR §264.116). Active access controls will be employed for at least the first one hundred (100) years after final facility closure. In addition, a passive control system consisting of monuments or markers shall be erected at the site to inform future generations of the location of the WIPP repository (see "Permanent Marker Conceptual Design Report" [DOE, 1995b]).

B. Discussion of Draft Permit Condition

Since Module VI.C of the Draft Permit complies with the applicable regulation (20 NMAC 4.1.500, § 264.117(a)(1)) and mandates a 30-year post-closure care period, the NMED lacks the authority to regulate active access controls employed after the completion of the post-closure care period. Neither can the NMED regulate passive institutional controls which will be enacted after the post-closure care period ends. Further, the "Permanent Marker Conceptual Design Report" is not included in the Draft Permit.

C. Proposed Revision to Draft Permit Conditions

A record of the WIPP Project shall be listed in the public domain in accordance with the requirements of 20 NMAC 4.1.500 (incorporating 40 CFR § 264.116).

2.2.9 Comments on Attachments J and J1

COMMENT 83: DRAFT PERMIT ATTACHMENT J, PAGE J-1, LINES 16 TO 25

A. Draft Permit Attachment Text

The post-closure care period begins after completion of closure of the first underground hazardous waste disposal unit (HWDU) and continues for thirty (30) years after final closure of the facility. Assuming the first underground HWDU is closed three (3) years after issuance of the Permit and the operating and closure period is no more than thirty-five (35) years (see Permit Attachment I-1), the post-closure care period will extend for sixty-two (62) years. The post-closure care period may be shortened or lengthened by the Secretary of the NMED, based on evidence that human health and the environment are being protected or are at risk. During the post-closure period, the WIPP shall be maintained in a manner that complies with the environmental performance standards applicable to the facility. During this period, the Permittees will employ active institutional controls as necessary.

B. Discussion of Draft Permit Condition

Since Module VI.C of the Draft Permit complies with the applicable regulation (20 NMAC 4.1.500, § 264.117(a)(1)) and mandates a 30-year post-closure care period, there should be no condition that appears to mandate a longer post-closure care period.

C. Proposed Revision to Draft Permit Conditions

*The post-closure care period begins after completion of closure of the first underground hazardous waste disposal unit (**HWDU**) and continues for thirty (30) years after final closure of the facility. The post-closure care period may be shortened or lengthened by the Secretary of the NMED, based on evidence that human health and the environment are being protected or are at risk. During the post-closure period, the WIPP shall be maintained in a manner that complies with the environmental performance standards applicable to the facility. During this period, the Permittees will employ active institutional controls as necessary.*

2.2.10 Comments on Attachment N

There are no specific comments on these attachments, however, there are editorial comments, and comments that modify, clarify, or supplement the text in the DOE's Permit Application which are contained in the Redline/Strikeout version of the Draft Permit.

2.2.11 Comments on Attachment O

There are no specific comments on the WIPP Part A.

2.3 Comments on Module III and Attachments

2.3.1 Comments on Module III

COMMENT 84: DRAFT PERMIT MODULE III.A.1, PAGE III-1

A. Draft Permit Module Text

The Waste Handling Building Container Storage Unit (WHB Unit) is located in the Waste Handling Building (WHB) at the WIPP facility. The WHB comprises a total enclosed area of approximately 84,000 ft^2 (7,804 m^2). The WHB Unit shall comprise a surface area of no more than 33,175 ft^2 (3,082 m^2) within the WHB CH Bay, as depicted in Permit Attachment M1, Figure M1-1.

B. Discussion of Draft Permit Condition

The Draft Permit does not allow the use of the RH-TRU side of the facility for waste management. See Section 1.1.3 regarding the need to include the RH-TRU waste management facilities and processes in this permit. Module III and related attachments should be changed to reflect RH TRU mixed waste storage and disposal.

C. Proposed Revision to Draft Permit Condition

Modify the text in Module III.A and relevant attachments, as follows to include RH-TRU waste:

1. Module III.A.1, Page III-1

This Module authorizes the storage and management of transuranic (TRU) mixed waste containers in the Waste Handling Building and Parking Area Container Storage Units described below. Specific facility and process information for the storage and management of TRU mixed waste in these Container Storage Units is incorporated in Permit Attachment M1 (Container Storage).

2. Module III.A.1., Page III-1

The Waste Handling Building Container Storage Unit (WHB Unit) is located in the Waste Handling Building (WHB) at the WIPP facility. The WHB comprises a total enclosed area of approximately 84,000 ft^2 (7,804 m^2). The WHB Unit shall comprise a surface area of no more than 33,175 ft^2 (3,083 m^2) within the WHB CH Bay and no more than 20,445 ft^2 (1,900 m^2) on the RH side of the WHB, as depicted in Permit Attachment M1, Figure M1-1.

The permittees may store and manage TRU mixed waste in the WHB Unit, provided the Permittees comply with the following conditions:

> *III.A.1.a Storage Containers - the Permittees shall store TRU mixed waste in containers specified in Permit Conditions III.C.1.*
>
> *III.A.1.b Storage locations and quantities - the Permittees may store TRU mixed waste containers in five (5) locations in the WHB Unit, as specified in Table III.A.1 below and depicted in Permit Attachment M1, Figure M1-7. The Permittees may*

store quantities of TRU mixed waste containers in these locations not to exceed the maximum capacities specified in Table III.A.1 below.

3. Table III.A.1, Page III-*2*

Table - WHB Unit		
Description	*Area*	*Maximum Capacity*
TRUDOCK Storage Area	*4,734 ft^2 (440 m^2)*	*530.4 ft^3 (15 m^3)*
NE Storage Area	*2,924 ft^2 (272 m^2)*	*1856 ft^3 (52.6 m^3)*
SE (Shielded) Storage Area	*292.5 ft^2 (27.2 m^2)*	*265 ft^3 (7.5 m^3)*
Derived Waste Storage Area	*48 ft^2 (4.46 m^2)*	*66.3 ft^3 (1.88 m^3)*
RH Storage Area	*20,445 ft^2 (1,900 m^2)*	*63 ft^3 (1.8 m^3)*
Total	*--*	*2781 ft^3 (78.8 m^3)*

Change the conditions regarding the parking area to include RH TRU mixed waste as follows:

4. Module III.A.2, Page III-2

The Parking Area Container Storage Unit (Parking Area Unit) is an asphalt and concrete surface extending from the fence north of the rail sidings to the WHB, within the Radiological Control Area. The Parking Area Unit shall be enclosed by chain link fence. The Parking Area Unit shall comprise a surface area of no more than 272,500 ft^2(25,315 m^2), as depicted in Permit Attachment M1, Figure M1-2.

The Permittees may store and manage TRU mixed waste in the Parking Area Unit, provided the Permittees comply with the following conditions:

> *Module III.A.2.a Storage containers - the Permittees shall store TRU mixed waste in containers specified in Permit Conditions III.C.1. These TRU mixed waste containers shall be stored within sealed TRUPACT-II shipping containers or in the RH-TRU road cask.*
>
> *Module III.A.2.b Storage locations and quantities - the Permittees shall store TRU mixed waste containers in any location within the Parking Area Unit, as specified in Table III.A.2 below. The Permittees may store quantities of TRU mixed waste containers within sealed TRUPACT-II shipping containers or RH-TRU road casks in these locations not to exceed the maximum capacities specified in Table III.A.2 below.*

5. Table III.A.2, Page III-3

Table - Parking Area Unit		
Description	Area	Maximum Capacity
Parking Area	272,500 ft^2 (25,315 m^2)	4,773 ft^3 (135 m^3) CH-TRU 126 ft^3 (4 m^3) RH-TRU
Total	--	4,899 ft^3 (139 m^3)

6. Module III.C.1.e

RH-TRU Canister--with a gross internal volume of 235 gallons (890L)

Add the following text to the indicated Attachments:

7. Attachment M, Page M-1, Lines 5 to 27

*Module III of the permit authorizes the storage and management of contact-handled (**CH**) TRU mixed waste containers and remote-handled (**RH**) TRU mixed waste canisters in the Waste Handling Building and Parking Area Container Storage Units. The technical requirements of 20 NMAC 4.1.500 (incorporating 40 CFR §§ 264.170 to 264.178) are applied to the operation of the Waste Handling Building Container Storage Unit (**WHB Unit**), and the Parking Area Container Storage Unit (**Parking Area Unit**). Permit Attachment M1 describes the container storage units, the TRU mixed waste management facilities and operations, and compliance with the technical requirements of 20 NMAC 4.1.500.*

*The WIPP is a geologic repository mined within a bedded salt formation, which is defined in 20 NMAC 4.1.100 (incorporating 40 CFR §260.10) as a miscellaneous unit. As such, hazardous waste management units (**HWMUs**) within the repository are eligible for permitting according to 20 NMAC 4.1.101 (incorporating 40 CFR §260.10), and are regulated under 20 NMAC 4.1.500, Miscellaneous Units.*

*Module IV of the permit authorizes the management and disposal of CH and RH TRU mixed waste containers in panels, also referred to as underground Hazardous Waste Disposal Units (**HWDUs**). The Disposal Phase will consist of receiving TRU mixed waste shipping containers, unloading and transporting the waste containers to the Underground HWDUs, emplacing the waste in the Underground HWDUs, and subsequently achieving closure of the Underground HWDUs in compliance with applicable State and Federal regulations. As required by 20 NMAC 4.1.500 (incorporating 40 CFR § 264.601), the Permittees shall satisfy the environmental performance standards for a miscellaneous unit, which are applied to the Underground HWDUs in the geologic repository. Permit Attachment M2 describes the HWDUs, the TRU mixed waste management facilities and operations, and compliance with the technical requirements of 20 NMAC 4.1.*

8. Attachment M1, Page M1-3, At Line 15

RH Canister

The payload canister, or RH canister, meets all the requirements of DOT specification 7A regulations. It is a carbon-steel single-shell container measuring 26 in. (0.7 m) in diameter, with an overall length of 121 in. (3.1 m). The canister is vented using a suitable high efficiency particulate air (HEPA)-grade filter and is capable of overpacking three 30-gal (114-L) or 55-gal (208-L) waste drums or 235 gal (890 L) of uncontainerized waste for handling purposes.

9. Attachment M1, Page M1-6, At Line 28

<u>The RH Bay</u>

RH-72B shielded road casks containing RH waste canisters will be received into the WHB through an entry on the RH side of the WHB. The WHB RH side contains two major areas for handling RH mixed waste: the RH Bay and the transfer complex. The transfer complex is divided into three subareas designed for specific functions: the cask-unloading room, the Transfer Cell, and the (facility) cask-loading room.

The RH Bay is a high-bay area for RH-72B shielded road (or railroad) cask receiving and subsequent handling operations. The trailer carrying the RH-72B shielded road cask will enter the RH Bay through a set of double doors on the eastern side of the WHB. This entry also provides for rail car entry. Separate heating, ventilation, and air-conditioning (HVAC) systems are provided that maintain the pressure in the RH side of the WHB lower than the outside ambient atmospheric pressure for contamination control. Because there are no air locks at these access doors, the period of time that the doors will be open will be minimized and limited to times when there are no unsealed shielded road casks containing RH TRU mixed waste canisters in the RH Bay. The RH Bay houses the road-cask transfer car, which is a self-propelled rail-guided car that travels between the RH Bay and the cask unloading room. The RH Bay also provides space for an overhead bridge crane with an auxiliary hoist used for shielded road cask handling and maintenance operations.

Following shielded road-cask inspections, which include contamination surveys, the impact limiters will be removed while the shielded road cask is on the trailer. The shielded road cask will be unloaded from the trailer using the overhead bridge crane and will be placed on the road-cask transfer car. The road-cask transfer car (Figure D-20) incorporates an integral work platform that provides personnel access to the head area of the road cask for unloading and shipment preparations, including conducting radiological surveys, physical inspections, minor maintenance, and decontamination, if necessary.

During shipping preparations for the shielded road cask, lay-down space will be provided in the RH Bay for components that must be removed during unloading. Within the operating envelope of the overhead bridge crane, the RH Bay will provide space and equipment for periodic shielded road-cask and facility-cask maintenance. If required, this area will also be used for cask-decontamination activities.

The inner containment vessels of the RH-72B shielded road casks will only be opened in the Transfer Cell. This procedure will be performed remotely to preclude a threat to human health or the environment. The Transfer Cell will be maintained at a greater negative differential pressure than the other areas of the WHB to ensure that gases or other airborne contaminants will be exhausted through HEPA-grade filters to the Transfer Cell area. The negative differential pressure will also prevent any contaminants from escaping the Transfer Cell in the event that the Transfer Cell is breached (e.g., a door is opened to the Transfer Cell).

<u>The Cask-Unloading Room</u> The cask-unloading room is a concrete-shielded room into which the shielded road cask will be moved by the road-cask transfer car. In this room, the road cask will be removed from the car, and lowered into the Transfer Cell. Since the canister will remain in the cask with the inner cask lid in place during this handling, there will be no release of contamination that may potentially be present inside the road cask. Consequently, no special ventilation arrangements will be needed, and the concrete-filled shield door that separates the cask-unloading room from the RH Bay may remain open.

A floor valve will be available for closing and separating the cask-unloading room from the Transfer Cell after the shielded road cask has been lowered through the opening. This will limit the ventilation path while the road cask is in the Transfer Cell with a canister. The floor valve is interlocked to the crane in the cask-unloading room so that the valve cannot be closed unless the crane yoke is above the elevation where a hanging road cask would clear the valve.

<u>The Transfer Cell</u> The Transfer Cell, located beneath the other rooms, provides the means to transfer shielded road casks with canisters from the cask-unloading room to the cask loading room via a shuttle car. In addition to holding a road cask, the shuttle car has two positions for the temporary storage of RH mixed waste, if required. The cell includes provisions for a manual override tool to release the grapple from a RH canister at the cask-loading room port in the event of a grapple failure. This tool will be operated from an area shielded from the Transfer Cell. The road cask with a canister will be lowered into the shuttle car through a valve in the floor of the cask-unloading room using the room bridge crane and a special road cask lifting fixture. Operations in the Transfer Cell will be monitored by closed-circuit television cameras.

<u>The Cask Loading Room</u> The Cask Loading Room provides for transfer of a RH canister to the facility cask for subsequent transfer to the waste hoist and to the underground. The facility cask (Figure D-24) is designed to reduce radiation levels to less than 200 millirem per hr at the surface of the casks, with a canister reading of 1,000 rem per hr.

The transfer operation will be accomplished by lifting the canister from the shielded road cask in the shuttle car through the shield valve into a vertically oriented facility cask positioned in the Cask Loading Room. The shuttle car will position the road cask and canister directly under the Cask Loading Room shield valve. The telescoping port shield valve will mate with the underside of the facility cask for shielding continuity, as does the shield bell, located above the facility cask. The operating console that will be used to accomplish this sequence of operations will be located behind a shadow shield.

Once loaded, the facility cask will be rotated to the horizontal position on the facility-cask

transfer car and will then be ready for transfer onto the waste hoist. The Cask Loading Room functions as an air lock between the Waste Shaft and the Transfer Cell and RH Bay.

RH-72B Shielded Road Cask

The RH-72B shielded road cask is designed to meet DOT Type B shipping container requirements and is a cylinder consisting of a separate inner vessel within an outer cask protected by impact limiters at each end. Neither the outer cask nor the inner-containment vessel will be vented. Each container is capable of withstanding an internal pressure of 150 lb/in.^{2} (1,034 kPa) gauge. Payload capacity of each RH-72B shielded road cask is 8,000 lbs (3,628 kg). The payload will consist of a canister of RH TRU mixed waste, which may contain 235 gal (890 L) noncontainerized waste or waste in 30 gal (114 L) or 55 gal (208 L) drums. The weight of the canister is included in the total payload.

The inner containment vessel is made of stainless steel and provides a cavity for the payload. The lid is secured to the body of the vessel by closure bolts. To center the canister and to facilitate insertion and removal, internal spacers are provided in the inner vessel. The outer cask is also a stainless steel vessel that is constructed of two concentric shells enclosing a cast-lead shield to protect against gamma radiation. The outer cask will be protected at each end by energy-absorbing impact limiters, which are stainless steel shells filled with polyurethane foam. The impact limiters also act as thermal insulators to protect seal areas from fire in the event of an incident/accident.

Overhead Bridge Crane

The overhead bridge crane will be used to lift the RH-72B shielded road cask from the trailer, once it is admitted into the RH Bay, and place it on the road cask transfer car. It will also be used to remove the impact limiters and the outer lid of the RH-72B shielded road cask.

The Road-Cask Transfer Car

The road-cask transfer car, a self-propelled, rail-guided car, will travel between the RH Bay and the cask-unloading room, which is part of the transfer complex. The road-cask transfer car will support the shielded road cask and will incorporate an integral working platform that will provide personnel access to the head area of the shielded road cask for cask-unloading preparations, inspections, and repairs.

The Facility Cask

The RH canister will be placed inside the facility cask, which will be used for shielding during transfer of the RH canister from the transfer complex to the HWDU for emplacement underground. The facility cask body consists of two concentric steel cylinders. The annulus between the cylinders is filled with lead, and gate shield valves are located at either end. Figure D-24 provides an outline configuration of the facility cask.

The Facility-Cask Transfer Car

The facility-cask transfer car is a self-propelled rail car that will operate in the cask-loading room for loading the RH canister from the road cask on the shuttle car to the facility cask.

Once the facility cask is loaded, the facility-cask transfer car will move onto the waste shaft conveyance and will then be transported underground. At the underground waste station, the facility-cask transfer car will proceed away from the waste hoist conveyance to provide access to the facility cask by a forklift.

The Facility-Cask Rotation Fixture

The facility-cask rotating device will be used to rotate the facility cask from the horizontal position to the vertical position to allow RH canister-loading into the facility cask from the shuttle car. Once the facility cask is loaded, the rotating device will rotate the facility cask back to the normal horizontal position.

The Grapple Hoist

A grapple hoist will be used to hoist the RH canister from the shuttle car into the facility cask.

10. Attachment M1, Page M1-6, Lines 29 to 37 and Page M1-7, Lines 1-12

The parking area south of the WHB (see Figure M1-2) will be used for storage of waste containers within sealed shipping containers awaiting unloading. The area extending south from the WHB within the fenced enclosure identified as the Radiological Control Area on Figure M1-2 is defined as the Parking Area Unit. This area provides space for 12 trailers loaded with TRUPACT-IIs and three loaded road casks or rail casks, corresponding to 4,773 ft^3 (135 m^3) of CH waste and 126 ft^3 (4 m^3) of RH waste. Secondary containment and protection of the waste containers from standing liquid are provided by the transportation containers. Wastes placed in the Parking Area Unit will remain sealed in their transportation containers at all times while in this area.

*The maximum number of TRUPACT-IIs that will be stored in the parking area is 36, containing a maximum of 72 SWBs or 504 drums of CH TRU mixed waste. The Nuclear Regulatory Commission (**NRC**) Certificate of Compliance requires that sealed TRUPACT-IIs, which contain waste, be vented every 60 days to avoid unacceptable levels of internal pressure. Typically, during normal operations the maximum residence time of any one container in the Parking Area Unit is five days. Therefore, during normal waste handling operations, no TRUPACT-IIs will likely require venting while located in the Parking Area Unit. Any off-normal event that might drive residence times in TRUPACT-IIs to 60 days or greater in this unit shall be handled in accordance with Section M1-1e(2) of this Permit Attachment. Under no circumstances shall a TRUPACT-II be stored in the Parking Area Unit for more than fifty-nine (59) days after the date that the inner containment vessel of the TRUPACT-II shipping container was sealed at the generator site.*

11. Attachment M1, Page M1-7, At Line 29

The amount of RH TRU mixed waste disposal planned is two canisters per day or ten per week on the same shifts as CH waste operations. During normal operations, a maximum of two canisters will be stored in the Transfer Cell. The storage capacity of the Transfer Cell is 63 ft^3 (1.78 m^3) . The floor and wall coatings provide an impermeable surface that serves as secondary containment in the Transfer Cell. The storage positions that hold the canisters have openings which keep the canisters from standing in liquid.

12. Attachment M1 [New Section M1-1d(3)], Page M1-12, At Line 21

M1-1d(3) RH TRU Mixed Waste Handling

RH TRU mixed waste will arrive at the WIPP facility in a shielded road cask loaded on a tractor-trailer or in a railroad cask loaded on a rail car. Upon arrival, radiological surveys, security checks, and shipping documentation reviews will be performed. Upon completion of these checks, the Hazardous Waste Manifest will be signed to release the driver. Should radiological surveys (i.e., surface dose rate, contamination) exceed acceptable levels, the road cask and transport trailer will be placed outside the WHB in the controlled area or in the WHB itself. Factors such as weather conditions, time of receipt, and space availability will determine the actual location for placement of the road cask and transport trailer. This decision will be made on a case-by-case basis. Once the location is established, the appropriate radiological boundaries (i.e., ropes, placards, etc.) will be erected around the road cask and transport trailer consistent with the WIPP facility radiological protection policy.

In the RH Bay, the shielded cask will be unloaded from the tractor-trailer or railcar via a bridge crane and will be placed on the cask transfer car. The outer cask lid will be removed, and the inner cask lid will be prepared for removal. The shielded cask will be moved into the unloading room of the transfer complex and will be positioned under the unloading room 25-ton crane. The shielded cask will then be lifted and suspended to clear the transfer car, so the empty car can be removed from the Unloading Room. Once clear of the transfer car, and utilizing the 25-ton crane, the shielded road cask will be aligned over the Transfer Cell port, the floor valve opened, and the cask lowered into an awaiting transfer shuttle car. After disconnecting and raising the crane hook, the floor valve will be closed.

In the Transfer Cell, the shielded road cask (with canister) will be moved and aligned to the (facility) Cask Loading Room port via the shuttle car. Using the Cask Loading Room hoist, the inner cask lid will be removed, and the canister will be lifted vertically from the shielded road cask (through an open floor valve) into the facility cask located on the facility-cask transfer car in the room above. During this cask-to-cask transfer, the telescoping port shield will mate with the underside of the facility cask for shielding continuity, as does the shield bell, located above the facility cask. The operating console for these operations is located behind a shadow shield. Once the canister is loaded and the facility cask shield valves are closed, the facility cask will be rotated to the horizontal position. A shield door will then be opened, accessing the waste hoist. The facility-cask transfer car will be loaded onto the waste hoist and will be lowered to the waste shaft station underground.

Once the shielded road cask is empty, it will be surveyed for internal contamination, and if found contaminated, a determination will be made regarding the return of the road cask with canister (dependent upon its physical condition)to the shipping site. After the survey, the road cask will have its inner cask lid inserted, then be moved and lifted into the Unloading Room, placed on the road-cask transfer car, and transferred back to the RH Bay. Additional surveys will be performed on the cask to check for exterior contamination, and if decontamination is necessary it will be performed as necessary. During its lifting from the road cask into the facility cask, the RH TRU mixed waste identification numbers will be verified (using a remote visual or scanner system) against the Hazardous Waste Manifest and WWIS to verify that waste is suitable for emplacement. The generator's copy of the manifest is then returned to the generator. If there are any discrepancies, the generator will

be contacted for resolution. Discrepancies that are not resolved within 15 days will be reported to the NMED as required by 20 NMAC 4.1, Subpart V, § 264.72.

At the waste shaft station underground, the facility cask will be moved from the waste hoist cage by the facility-cask transfer car. A forklift will be used to remove the cask from the transfer car and to transport the cask to the HWMU. There the facility cask will be placed on the horizontal emplacement equipment, which will have been previously aligned with a horizontal hole bored into the room wall. The horizontal emplacement equipment assembly will then insert the canister into the hole. A shield plug will then be inserted into the hole to provide radiation shielding.

The shield plug is a cylinder 70 in. long, 29 in. in diameter, and a 1 3/4 in. wall thickness (175 cm by 4.4 cm). It has a 5 in. (12.5 cm) thick steel plate welded to the bottom of the cylinder and a 3 in. (7.5 cm) thick plate with a standard handling pintle on the other end. This shield plug weighs approximately 4,200 lbs (1,900 kg). An alternative shield plug design, better suited to disposal operations, is being developed. The alternative shield plug will be reinforced concrete with approximately the same outside dimensions as the steel shield plug and will be handled and emplaced in a similar fashion. The primary advantages in changing to a concrete shield plug are a reduction in cost and increased compatibility with the salt environment. Shield plugs are inserted into the borehole (30 in. (75 cm) in diameter) after emplacement of the waste canister (26 in. (65 cm) in diameter). The shield plug is inserted into the borehole sleeve after emplacement of the waste canister. It provides the necessary shielding for the exposed end of the borehole, limiting the borehole radiation surface dose rate to less than 5 mrem/hr for 100 rem/hr surface dose rate canisters. Although the shield plugs do not provide borehole closure, a seal can be made around the plug to the inside diameter of the borehole as a provision for a contamination barrier, if necessary. Stop bars prevent a shield plug from working its way out of the borehole. The stop bar is a 2 in. (5 cm) wide by 3/4 in. (1.9 cm) thick steel bar that is attached to the salt with rock bolts.

The amount of RH TRU mixed waste disposal in each panel is limited based on thermal and geomechanical considerations. A nominal spacing of 8 ft (2.4 m) between centers for RH TRU mixed waste canisters is planned.

13. Attachment M1, Page M1-12, Lines 25 to 37 and Page M1-13, Lines 1 to 7

The 7-packs and SWBs will be visually inspected prior to each movement and, at a minimum, weekly, to ensure that the waste containers are in good condition and that there are no signs that a release has occurred. This visual inspection shall not include the center drums of 7-packs and waste containers positioned such that visual observation is precluded due to the arrangement of waste assemblies on the facility pallets. Containers of waste stored in the Transfer Cell will not be inspected, as this would violate the radiological control program goal to minimize occupational radiological exposures As Low As Reasonably Achievable. However, this area is monitored using closed circuit video cameras. If waste handling operations should stop for any reason with containers located on the TRUDOCKS in the TRUPACT-II shipping containers, primary waste container inspections could not be accomplished until the containers of waste are removed from the TRUPACT-II. If the lid to the TRUPACT-II inner container vessel is removed, radiological checks (swipes of TRUPACT-II inner surfaces) can be used to determine if there is contamination within the TRUPACT-II. Such contamination could indicate a waste container leak or spill. Using the

principle of co-detection, a spill or leak of a radioactive contaminant from a waste container would also be assumed to be a hazardous waste spill or release.

Inspections of the Shielded Storage Area designated for holding waste while manifest discrepancies are resolved, are performed prior to use and weekly thereafter, so long as waste containers reside in the Shielded Storage Area. Waste containers residing within a TRUPACT-II are not inspected, as described in the first bullet in Section M1-1e(2).

Waste containers will be inspected prior to reentering the waste management process line for downloading to the underground. Waste containers stored in this area will be inspected at least once weekly.

14. Attachment M1, Page M1-13, Lines 9 to 39 and Page M1-14, Lines 1 to 25

Inspections will be conducted in the parking area at a frequency not less than once weekly. These inspections are applicable to loaded, stored TRUPACT-IIs and road casks. The perimeter fence located at the lateral limit of the parking area, coupled with personnel access restrictions into the WHB, will provide the needed security. The perimeter fence and the southern border of the WHB shall mark the lateral limit of the parking area storage area. Inspections of the TRUPACT-IIs and/or road casks stored in the parking area will focus on the inventory and integrity of the shipping containers and the spacing between TRUPACT-II trailers and road casks. This spacing will be maintained at a minimum of four feet.

Loaded TRUPACT-IIs and road casks will be inspected weekly during use and prior to each reuse.

Inspection of waste containers is not possible when the containers are in their shipping container (i.e., TRUPACT-II or road cask). Inspections can be accomplished by bringing the shipping containers into the WHB and opening them and lifting the waste containers out for inspection. Removing containers strictly for the purposes of inspection results in unnecessary worker exposures and subjects the waste to additional handling. Thus, the waste containers need not be inspected until they are from the shipping container for emplacement underground. Because shipping containers are sealed and are of robust design, no harm can come to the waste while in the shipping containers and the waste cannot leak or otherwise be released to the environment. TRUPACT-II shipping containers must be opened every 60 days for the purposes of venting, so that the longest waste would be uninspected would be for 60 days from the day the waste was first placed in the TRUPACT-II at the generator site. The road cask has not yet been certified by the NRC so that the length of time it can be sealed prior to venting has not yet been established. Venting the containers involves removing the outer lid and installing a tool in a port in the inner lid. Removal of the road cask inner lid occurs only with the cask in the Transfer Cell using the facility hoist. Inspection of the RH canister can only be done during the cask-to-cask transfer from the road cask to the facility cask.

The following strategy will be used for inspecting CH TRU waste containers that will be retained within their shipping containers for an extended period of time:

- *If the reason for retaining the TRU mixed waste containers in the shipping container is due to an unresolved manifest discrepancy, the Permittees will return the shipment to the generator prior to the expiration of the 60 day*

NRC venting period or within 30 days after receipt at the WIPP, whichever comes sooner. In this case, no inspections of the internal containers will be performed. The stored TRUPACT-II will be inspected weekly as described above.

- *If the reason for retaining the TRU mixed waste containers in the TRUPACT-II is due to an equipment malfunction that prevents unloading the waste in the WHB Unit, the DOE will return the shipment to the generator prior to the expiration of the 60 day NRC venting period. In this case, the DOE would have to ship the TRU mixed waste containers back with sufficient time for the generator to vent the shipment within the 60 day limit. In this case, no inspections of the internal containers will be performed. The stored TRUPACT-II will be inspected weekly as described above.*

- *If the reason for retaining the TRU mixed waste containers is due to an equipment malfunction that prevents the timely movement of the waste containers into the underground, the waste containers will be kept in the TRUPACT-II until day 30 (after receipt at the WIPP) or the expiration of the 60 day limit, whichever comes sooner. At that time the TRUPACT-II will be moved into the WHB and the TRU mixed waste containers removed and placed in one of the permitted storage areas in the WHB Unit. If there is no additional space within the permitted storage areas of the WHB Unit, the Permittees may apply for an emergency permit with the NMED for the purposes of storing the waste elsewhere in the WHB Unit. Waste containers will be inspected when removed from the TRUPACT-II and weekly while in storage in the WHB Unit. TRUPACT-IIs will be inspected weekly while they contain TRU mixed waste containers as discussed above.*

This strategy minimizes both the amount of shipping that is necessary and the amount of waste handling, while maintaining a reasonable inspection schedule. The Permittees will stop shipments of waste for any equipment outage that will extend beyond three days. The Permittees will not store RH waste at the facility outside the shipping cask beyond the permitted capacity of the Transfer Cell.

15. Attachment M1, Page M1-15, Lines 1 to 14

During normal operations, the floor of the normal storage areas within the CH Bay shall be visually inspected on a weekly basis to verify that it is in good condition and free of cracks and gaps. Floors in the Transfer Cell can only be inspected when no waste is being stored. Inspections will occur at least annually when these areas undergo routine maintenance. This less frequent inspection schedule is justified because of the high radiation fields that are present when waste is being stored and because these floors are not subjected to vehicle traffic. Floor areas of the WHB in use during off-normal events will be inspected prior to use and weekly thereafter. All TRU mixed waste containers located in the permitted storage areas shall be elevated at least 6 in. (15 cm) from the surface of the floor. TRU mixed Waste containers that have been removed from TRUPACT-II shipping containers shall be stored at a designated storage area inside the WHB so as to preclude exposure to the elements.

Secondary containment at permitted storage areas inside the WHB shall be provided by the floor. These areas include the CH bay floor, and the Transfer Cell. The WHB is engineered such that during normal operations, the floor capacity is sufficient to contain liquids upon release. The parking area requires no engineered secondary containment since no waste is to be stored there unless it is protected by the TRUPACT-II shipping containers or the road casks.

16. Attachment M1, Page M1-16, At Line 3

The maximum capacity of the Transfer Cell is two canisters corresponding to 63 ft^3 (1.8 m^3) of RH TRU waste. Two canisters at 235 gal (890 L) per canister = 470 gal (1780 L) of waste. 470 gal (1780 L) of waste x ten percent of total volume = 47 gal (178 L) of waste. This is less than the volume of a single container, which is 235 gal (890 L), therefore, the larger volume is used for determining the secondary containment requirements. 235 gal (890 L) of waste x one percent liquids = 2.35 gal (8.9 L) of liquid that must be contained in secondary containment.

17. Attachment M1, Page M1-16, Lines 12 to 17

The CH TRU portion of the WHB Unit has 33,175 ft^2 (3,082 m^2) of floor space, the NE Storage Area in the northeast corner of the WHB Unit (Figure M1-7) has 2,924 ft^2 (272 m^2) of floor space, and the Shielded Storage Area has 292.5 ft^2 (27.2 m^2) of floor space. Thus, the floor area of the NE Storage Area and the Shielded Storage Area of the WHB Unit provide sufficient secondary containment to contain a release of ten percent of one percent of the volume of all of the containers, or one percent of the capacity of the largest container, whichever is greater.

The Transfer Cell floor is 1,012 ft^2 (94 m^2) and provides sufficient secondary containment for RH TRU waste stored in that area. In addition, the Transfer Cell contains a 135 gal (511 L) sump that will collect any liquids that spill from containers.

Any liquid observed on the secondary containment system will be removed in a timely manner, with the exception of RH waste storage areas, as previously noted. Since RH waste is designated for storage in the Transfer Cell only, a release would not pose an immediate threat to human health or the environment. The Transfer Cell will undergo periodic maintenance activities, at which time any releases that occurred since the last maintenance activity will be cleaned up.

18. Attachment M1, Page M1-16, Lines 23 to 26

Parking Area Unit

Containers of TRU mixed waste to be stored in the Parking Area Unit will be in TRUPACT-II shipping containers or RH TRU shipping casks. These shipping containers provide adequate secondary containment.

19. Attachment M1, Page M1-17, Lines 6 to 13

The WHB Unit is located indoors which prevents run-on from a precipitation event. In addition, the containers are stored on facility pallets or standard drum pallets, which elevate

the CH TRU mixed waste containers at least 6 in. (15 cm) off the floor, or in TRUPACT-II shipping containers, so that any firewater released in the building will not pool around containers. RH TRU waste will either be in shipping casks, the facility cask, or the shuttle car raised several feet above the floor of the transfer cell which will protect them from firewater that may accumulate in the Transfer Cell. In the Parking Lot Unit, the containers of TRU mixed waste are always in TRUPACT-II shipping containers or RH TRU shipping casks which protect them from precipitation and run-on. Therefore, the WIPP container storage units will comply with the requirements of 20 NMAC 4.1.500 (incorporating 40 CFR § 264.175(b)(4)).

20. Attachment M1, Table M1-2, Page M1-22

CAPACITIES FOR EQUIPMENT	
CH Bay overhead bridge crane	*12,000 lbs.*
CH Bay forklifts	*26,000 lbs.*
Facility Pallet	*25,000 lbs.*
Adjustable center-of-gravity lift fixture	*10,000 lbs.*
Conveyance Loading Car	*70,000 lbs.*
Overhead Bridge Crane	*280,000 lbs.*
Road-Cask Transfer Car	*50, 000 lbs.*
Facility-Cask Transfer Car	*78,000lbs.*
Facility-Cask Rotation Fixture	*None specified*
Grapple Hoist	*12, 500 lbs.*
MAXIMUM GROSS WEIGHTS OF CONTAINERS	
Seven-pack of 55-gallon drums	*7,000 lbs.*
Four-pack of 85-gallon drums	*4,500 lbs.*
Ten-drum overpack	*6,700 lbs.*
Standard waste box	*4,000 lbs.*
TRUPACT-II	*19,250 lbs.*
RH TRU canister	*8, 000 lbs.*
MAXIMUM NET EMPTY WEIGHTS OF EQUIPMENT	
Facility cask	*67, 700 lbs.*
RH 72B Shielded Road Cask	*34,710 lbs*
Adjustable center of gravity lift fixture	*2,500 lbs.*
Facility pallet	*4,120 lbs.*

21. Attachment M2, Page M2-13, At Line 13

Add the following RH TRU process description:

The waste hoist will lower the loaded facility cask to the underground. At the waste shaft station underground, the facility cask will be moved from the waste hoist cage by the facility-cask transfer car. A forklift will remove the cask from the transfer car and to transport the loaded facility cask to the HWDU. There the facility cask will be placed on the horizontal

emplacement equipment, which will have been previously aligned with a horizontal hole bored into the room wall. The emplacement equipment will insert the canister into the horizontal hole. A shield plug will then be inserted into the hole to provide radiation shielding which is not intended to seal off the borehole.

The shield plug is a cylinder 70 in. long, 29 in. in diameter, and a 1 3/4 in. wall thickness (175 cm by 4.4 cm). It has a 5 in. (12.5 cm) thick steel plate welded to the bottom of the cylinder and a 3 in. (7.5 cm) thick plate with a standard handling pintle on the other end. This shield plug weighs approximately 4,200 lbs (1,900 kg). An alternative shield plug design, is being developed. The alternative shield plug will be reinforced concrete with approximately the same outside dimensions as the steel shield plug and will be handled and emplaced in a similar fashion. The primary advantages in changing to a concrete shield plug are a reduction in cost and increased compatibility with the salt environment. The shield plug is inserted into the borehole after emplacement of the waste canister. It provides the necessary shielding for the exposed end of the borehole, limiting the borehole radiation surface dose rate to less than 5 mrem/hr for 100 rem/hr surface dose rate canisters. Although the shield plugs do not provide borehole closure, a seal can be made around the plug to the inside diameter of the borehole as a provision for a contamination barrier, if necessary. Stop bars prevent a shield plug from working its way out of the borehole. The stop bar is a steel bar 2 in. (5 cm) wide by 3/4 in. (1.9 cm) thick attached to the salt with rock bolts.

The amount of RH TRU mixed waste disposal in each panel is limited based on thermal and geomechanical considerations. A nominal spacing of 8 ft (2.4 m) between centers for RH TRU mixed waste canisters is planned.

Each panel has the capacity to contain 22,900 ft^3 (649 m^3) of RH TRU waste. The ten-year period of the initial WIPP permit will encompass a maximum of 1,840,000 ft^3 (52,110 m^3) of CH and 69,000 ft^3 (1,954 m^3) of RH in three HWDUs.

22. Attachment M2, Table M2-1, Page M2-25

CAPACITIES FOR EQUIPMENT	
Facility Pallet	*25,000 lbs.*
Underground transporter	*28,000 lbs.*
Underground fork lift	*12,000 lbs.*
Cask Handling Forklift	*82, 000 lbs.*
Horizontal Emplacement Equipment	*10,000 lbs.*
MAXIMUM GROSS WEIGHTS OF CONTAINERS	
Seven-pack of 55-gallon drums	*7,000 lbs.*
Four-pack of 85-gallon drums	*4,500 lbs.*
Ten-drum overpack	*6,700 lbs.*
Standard waste box	*4,000 lbs.*
RH Waste Canister	*8,000 lbs.*
TRUPACT-II	*19,250 lbs.*
MAXIMUM NET EMPTY WEIGHTS OF EQUIPMENT	
Facility cask	*67, 700 lbs.*

Facility pallet	*4,120 lbs.*

23. Attachment D, Page D-4, Lines 22 to 39 and Page D-5, Lines 1 to 20

*Containers are used to manage TRU mixed waste at the WIPP facility. These containers are described in Permit Module III. Off-site CH TRU mixed waste will arrive in 55-gallon drums arranged as seven (7)-packs, as Ten Drum Overpacks (**TDOP**), or as standard waste boxes (**SWB**). RH TRU waste will arrive in RH canisters, which will have their integrity verified through radiation surveys taken during and/or after its transfer into the facility cask. The CH TRU waste containers will be visually inspected to ensure that the waste containers are in good condition and that there are no signs that a release has occurred. This visual inspection shall not include the center drums of 7-packs and waste containers positioned such that visual observation is precluded due to the arrangement of waste assemblies on the facility pallets. If waste handling operations should stop for any reason with containers located on the TRUPACT-II Unloading Dock (**TRUDOCK** storage area of the WHB Unit) in the TRUPACT-II shipping containers, primary waste container inspections could not be accomplished until the containers of waste are removed from the shipping containers. RH TRU waste containers stored in the Transfer Cell will not be inspected, as this would violate the radiological control program to minimize occupational radiological exposures As Low As Reasonably Achievable (ALARA). However, these areas are monitored using remote closed circuit video cameras.*

*Inspections will be conducted in the Parking Area Unit at a frequency not less than once weekly. These inspections are applicable to loaded, and stored TRUPACT-IIs. The perimeter fence located at the lateral limit of the Parking Area Unit, coupled with personnel access restrictions into the WHB Unit, will provide the needed security. The perimeter fence and the southern border of the WHB shall mark the lateral limit of the Parking Area Unit. Radiation Control Areas (RCA) can be established temporarily with barricades. More permanent structures can be installed. The western boundary can be established with temporary barricades since this area is within the perimeter fence. Access to RCAs will only be permitted to personnel who have completed General Employee Radiological Training (**GERT**), a program defined by the Permittees, or escorted by personnel who have completed GERT. This program ensures that personnel have adequate knowledge to understand radiological posting they may encounter at the WIPP site. If a fence is moved in the future, a permit modification will be submitted identifying the changes. Since waste to be stored in the Parking Area Unit will be in sealed TRUPACT-II shipping containers, there will be no additional requirements for engineered secondary containment systems. Inspections of the TRUPACT-IIs stored in the Parking Area Unit shall be conducted at a frequency no less than once weekly and will focus on the inventory and integrity of the shipping containers and the spacing between trailers carrying the TRUPACT-II shipping containers. This spacing will be maintained at a minimum of four feet.*

*Container inspections will be included as part of the surface TRU mixed waste handling areas (i.e. Parking Area Unit and WHB Unit) inspections described in Table D-1. These inspections will also include the Derived Waste Storage Area of the WHB Unit. The Derived Waste Storage Area will consist of containers of 55 or 85-gallon drums or SWBs. The total storage volume of this area is up to 66.3 cubic feet (1.88 cubic meters). A Satellite accumulation area (**SAA**) may be required in an area adjacent to the TRUDOCKs and in the RH Bay. These SAAs will be set up on an as needed basis at or near the point of generation and the derived waste will be discarded into the active derived waste container. In addition, the SAAs will be inspected in accordance with 20 NMAC 4.1.300 (incorporating 40 CFR §262.34).*

24. Attachment D, Table D-1, Page D-12, At Line 9

Add the following items to the end of Table D-1

System/Equipment Name	*Responsible Organization*	*Inspection[a] Frequency and Job Title of Personnel Normally Making Inspection*	*Deterioration[b]*	*Leaks/ Spills*	*Other*
Canister Shuttle	*Waste Operations*	*Preoperational[h, l] See List 8*	*Yes*	*NA*	*NA*
Facility Cask	*Waste Operations*	*Preoperational[l] See List 8*	*Yes*	*NA*	*NA*
Facility Cask Transfer Car	*Waste Operations*	*Preoperational[l] See List 8*	*Yes*	*NA*	*NA*
Facility Cask Turntable	*Waste Operations*	*Preoperational[l] See List 8*	*Yes*	*NA*	*NA*
Grapple Hoist	*Waste Operations*	*Preoperational[l] See List 8*	*Yes*	*NA*	*NA*
RH Emplacement Machine -Subassemblies *-Emplacement Machine*	*Waste Operations*	*Preoperational[l] See List 8*	*Yes*	*NA*	*NA*
Road Cask Transfer Car	*Waste Operations*	*Preoperational[l] See List 8*	*Yes*	*NA*	*NA*
25-Ton Bridge Crane	*Waste Operations*	*Preoperational[h, l] See List 8*	*Yes*	*NA*	*NA*

25. Attachment E, Page E-6, Lines 31 to 36

*The WIPP facility's equipment, structures, and procedures are specially designed for the safe handling of TRU mixed waste. Permit Attachments M1 and M2 detail how contact-handled (**CH**) TRU and remote handled (**RH**) TRU mixed waste are handled, including unloading and transport operations. The following is a summary of the activities, structures, and equipment that were developed to prevent hazards in unloading of TRU mixed waste, as required by 20 NMAC 4.1.900 (incorporating 40 CFR §270.14(b)(8)(i)).*

26. Attachment E, Page E-7, At Line 20

RH TRU mixed waste will arrive at the site in road casks, will be surveyed for radiation, and will be placed on cask-transfer cars. The cask will be moved to the Transfer Cell area of the WHB. The RH Bay also provides space for an overhead bridge crane with an auxiliary hoist used for road-cask handling and maintenance operations. The RH cask will be unloaded from the trailer using the overhead bridge crane.

27. Attachment E, Page E-8, Line 20

For the RH waste transport, a shuttle car operates beneath the cask loading and unloading rooms in the transfer cell to move the RH road cask to the cask-loading room, where the waste is placed in the facility cask (see Figure D-24) for subsequent transfer underground. The waste hoist is used to move the facility cask to the underground HWDU for emplacement. Transfer operations are monitored by closed-circuit television cameras. The facility cask will be used to move the RH waste underground from the waste hoist to the emplacement area.

All TRU mixed waste transport equipment is inspected at a frequency indicated in Table D-1. RH inspections in Table D-1 do not apply until receipt of RH waste.

28. Attachment E-2e, Page E-13, Lines 16 to 22

- *The shipping container, forklifts, unloading dock, crane, facility pallets, conveyance loading car, waste hoist cage, and underground waste transporter were designed or selected for use in order to minimize the need for TRU mixed waste handling personnel to come into contact with TRU mixed waste. Each of these items is discussed in detail in Permit Attachments M1 and M2; Section E-2a of this Permit Attachment discusses prevention of hazards to personnel during unloading operations.*

29. Attachment F, Page F-6, Lines 1 to 35, Page F-7, all Lines, Page F-8, Lines 1 to 7

Description of Containers

*CH TRU mixed waste containers will be either 55-gallon (gal) (208-liter (L)) drums singly or arranged into seven (7)-packs, 85-gal (321-L) drums (used as overpacks) singly or arranged into four (4)-packs, ten-drum overpacks (**TDOP**), or 66.3 ft^3 (1.88 m^3) SWBs. RH TRU mixed waste containers will be 31.4 ft^3 (890-L) canisters.*

Description of Surface Hazardous Waste Management Units

*The WHB Unit is the surface facility where waste handling activities will take place. The WHB Unit has a total area of approximately 84,000 square feet (ft^2) (7,803 square meters [m^2]) of which 33,175 ft^2 (3,083 m^2) are designated for the waste handling and container storage of CH TRU mixed waste and 20,445 ft^2 (1,900 m^2) are designated for the waste handling and container storage of RH TRU mixed waste. These areas are being permitted as a container storage unit. The concrete floors are sealed with an impermeable coating that has excellent resistance to the chemicals in TRU mixed waste and, consequently, provide secondary containment for TRU mixed waste. In addition, a Parking Area Unit south of the WHB will be used for storage of waste in sealed shipping containers awaiting unloading. This area is also being permitted as a container storage unit. The sealed shipping containers provide secondary containment in this hazardous waste management unit (**HWMU**).*

CH and RH Bay Operations

The typical processing rate for CH waste is 14 TRUPACT-IIs per day and the maximum is 28. Two shifts per day are planned; four days per week. The fifth day is for equipment maintenance with weekends available for more extensive maintenance, when necessary.

Once unloaded from the TRUPACT-IIs, CH waste containers (7-packs or SWBs or TDOPs) are placed in one of two positions on the facility pallet. The 7-packs or SWBs are stacked, as they arrive in the TRUPACT-II, on the pallet. The use of facility pallets will elevate the waste approximately 6 inches (in.) (15 centimeters [cm]) from the floor surface. Pallets of waste will then be relocated to the northeast area of the CH bay for normal storage. This storage area will be clearly marked to indicate the lateral limits of the storage area. This storage area will have a maximum capacity of seven facility pallets of waste during normal operations. These pallets will typically be staged in this area for a period of one to four days.

In addition, four TRUPACT-IIs, containing up to eight 7-packs or SWBs or four TDOPs, may occupy the staging positions at the TRUPACT-II Unloading Docks (TRUDOCK).

The amount of RH TRU mixed waste disposal planned is two canisters per day, or ten per week, on the same shifts as CH waste operations.

During normal operations, a maximum of two canisters will be stored in the Transfer Cell. The storage capacity of the Transfer Cell is 63 ft^3 (1.78 m^3). The floor and wall coatings provide an impermeable surface that serves as secondary containment in the Transfer Cell. The storage positions that hold the canisters have openings and stand-offs which keep the canisters from standing in liquid.

Aisle space shall be maintained in all CH Bay waste storage areas. The aisle space shall be adequate to allow unobstructed movement of fire response personnel, spill-control equipment, and decontamination equipment that would be used in the event of an off-normal event. An aisle space between facility pallets will be maintained in all CH TRU waste storage areas. Aisle space requirements do not apply in the case of RH canisters, since only one RH canister is expected to be processed at a time. Because of the high radiation fields, inspections and cleanup of spills and releases will not be conducted while waste is located in RH storage areas. If a release were to occur related to the storage of RH waste, all waste canisters would be removed from the Transfer Cell prior to initiating any clean up activities.

<u>Parking Area Container Storage Unit (Parking Area Unit)</u>

The area extending south from the WHB across the rail sidings is defined as the Parking Area Container Storage Unit. This area provides space for 12 TRUPACT-IIs corresponding to 4,773 ft^3 (135 m^3) of CH waste and three loaded road casks or four rail casks, corresponding to 126 ft^3 (4 m^3) of RH waste. Secondary containment and protection of the waste containers from standing rainwater are provided by the transportation containers.

The maximum number of TRUPACT-IIs that will be stored in the Parking Area Unit is 36. The TRUPACT-II safety criteria require that they be opened and vented at a frequency of at least once every 60 days. Typically, during normal operations the maximum residence time of any one container in the Parking Area Unit is four days. Therefore, during normal waste handling operations, TRUPACT-IIs will not require venting while located in the Parking Area Unit. Any off-normal event that drives residence times to 60 days or greater

in this storage area shall be mitigated by returning the shipment to the generator prior to the expiration of the 60 day NRC venting period or by moving the TRUPACT-IIs or RH casks inside the WHB Unit where the waste will be removed and placed in one of the permitted storage areas.

Off-Normal Events

Off-normal events may interrupt normal operations in the waste management process line. New waste shipments from the generator sites will be stopped for off-normal events which interrupt normal waste handling operations for more than three days. Three days represents the time it takes waste that is in transit to reach the WIPP facility. The Permittees will not turn around waste already in transit to the WIPP. Shipments in transit at the time of any off-normal event will be received and stored at the WIPP until normal operations resume and the waste can be emplaced. The stoppage of new shipments will minimize the need to store large quantities of waste in the parking area for extended periods of time.

Containment

The WHB Unit has concrete floors, which are sealed with an impermeable coating that resists all but the strongest oxidizing agents. Such oxidizing agents do not meet the TSDF-WAC and will not be accepted in TRU mixed waste at the WIPP facility. Therefore, TRU mixed wastes pose minimal compatibility problems with respect to the WHB floor.

During normal operations, the floor of the normal storage areas within the CH Bay shall be visually inspected on a weekly basis to verify that it is in good condition and free of cracks and gaps. Floors in the Transfer Cell can only be inspected when no waste is being stored. Inspections will occur at least annually when these areas undergo routine maintenance. However, limited camera inspections can be conducted when the Transfer Cell contains waste. This less frequent inspection schedule is justified because of the high radiation fields that are present when waste is present and because these floors are not subjected to vehicle traffic.

Floor areas of the WHB used during off-normal events will be inspected prior to use and weekly while in use. Containers located in the permitted storage areas shall be elevated from the surface of the floor. Facility pallets provide about 6 in (15 centimeters [cm]). of elevation. Waste containers that have been removed from shipping containers shall be stored at a designated storage area inside the WHB so as to preclude exposure to the elements.

Secondary containment at permitted storage areas inside the WHB Unit shall be provided by the floor. The parking area does not require engineered secondary containment, since waste is not stored there unless it is protected by the TRUPACT-II shipping containers or RH road casks. Floor drains, the fire suppression water collection sumps, and portable dikes, if needed, will provide containment for liquids that may be generated by fire fighting. Sump capacities and locations are shown in Drawing 41-F-087-014. Residual fire fighting liquids will be placed in containers and managed as described above.

30. Attachment F, Page F-28, At Line 31

Add the following section:

Control of Spills or Leaking or Punctured Containers of RH TRU Mixed Waste

In the event of spills or leaking or punctured containers of RH TRU mixed waste, the WIPP responds in three distinct phases: 1) the event, 2) the re-entry, and 3) the recovery. A contaminated canister is determined by a swipe survey performed on the interior of the road cask after the canister has been withdrawn.

1. *Unlike CH waste, the RH waste canisters, by virtue of the cask-to-cask transfers, are isolated from personnel. If contamination is detected, the canister is either re-inserted into the road cask for return to the shipping site, or continued for emplacement, depending upon the condition of the canister. Emplacement would continue with special provisions for contamination barriers and monitoring of the facility cask shield valves. The CMR is notified and the waste handling and radiological control groups prepare a RWP for entry into the Transfer Cell and cask unloading room for contamination surveys and cleanup.*

2. *Once a RWP is written and the Transfer Cell and cask unloading room are devoid of RH canisters, personnel enter with protective clothing to assess the conditions, take surveys and smears, and record results. Results are utilized by cognizant managers, RC personnel and ALARA Committee representatives determine the appropriate course of action to recover the area and casks. A plan to decontaminate and recover affected areas and equipment will be approved with a RWP written to establish the radiological controls required for the recovery.*

3. *During the recovery phase, the plan will be executed to utilize the necessary resources to conduct decontamination and/or fixing operations as needed. The completion of this phase will occur prior to returning the affected area and/or equipment to normal activities. All accessible areas are decontaminated to releasable levels, or may be covered with a fixative coating and established as a Fixed Contamination Area to prevent the spread of contamination in accordance with Article 222.3 of WP 12-5, WIPP Radiological Control Manual.*

   Equipment used during recovery could include: cloths, brushes, absorbent, squeegees, tape, bags, pails, slings, hand tools, and others as needed for a given incident.

The decontamination methods will initially involve wiping down structures and equipment in the area with absorbent cloths moistened with tepid water. Surveys of structures will be utilized to determine the need to continue decontamination activities. If further decontamination is required, nonhazardous decontaminating agents such as, Liquinox©, Simple Green©, Windex©, citric acid, Bartlett Strip Coat©, and high pressure CO_2, will be used to prevent generating mixed waste. RWPs and other administrative controls provide protective measures to help ensure that new hazardous constituents will not be added during decontamination activities.

Certain structures and/or equipment may be disassembled to facilitate decontamination, contamination fixing, or may be placed directly into a derived waste container. Items used in recovery operations (e.g., swipes, tools, PPE, etc.) may also be placed into a derived waste container.

When recovery is deemed by the recovery team to be complete, RC personnel will conduct one final, intensive radcon survey of the area and components in the area to release it for uncontrolled use. The free release criteria for items, equipment, and areas is < 20 dpm/100 cm^2 for alpha radioactivity and < 200 dpm/100 cm^2 for beta-gamma radioactivity. Personnel will then perform hazardous material sampling after decontamination efforts are complete to confirm the removal of hazardous waste substances. After cleanup is complete, facility personnel will complete an inspection and include the details of the spill and cleanup in the log.

COMMENT 85: DRAFT PERMIT MODULE III, PAGE III-2

A. Draft Permit Module Text

The Permittees may store TRU mixed waste containers in four (4) locations in the WHB Unit, as specified in Table III.A.1 below and depicted in Permit Attachment M1, Figure M1-7. The Permittees may store quantities of TRU mixed waste containers in these locations not to exceed the maximum capacities specified in Table III.A.1 below.

B. Discussion of Draft Permit Condition

The "container equivalent" column in Table III.A.1 is unnecessary and may be a source of confusion. The storage areas are permitted to contain a maximum volume, which is the only necessary specification. Demonstrating "container equivalency" could be contentious and is unnecessary if the maximum capacity/volume limit is applied. The container equivalency requirements should therefore be eliminated.

C. Proposed Revision to Draft Permit Condition

1. Table III.A.1, Page III-2

Delete the column titled "Container Equivalent" since it is not needed in addition to the "Maximum Capacity" column as follows:

Table - WHB Unit		
Description	*Area*	*Maximum Capacity*
TRUDOCK Storage Area	*4,734 ft^2 (440 m^2)*	*530.4 ft^3 (15 m^3)*
NE Storage Area	*2,924 ft^2 (272 m^2)*	*1856 ft^3 (52.6 m^3)*
SE (Shielded) Storage Area	*292.5 ft^2 (27.2 m^2)*	*265 ft^3 (7.5 m^3)*
Derived Waste Storage Area	*48 ft^2 (4.46 m^2)*	*66.3 ft^3 (1.88 m^3)*
RH Storage Area	*20,445 ft^2 (1,900 m^2)*	*63 ft^3 (1.8 m^3)*
Total	--	*2781 ft^3 (78.8 m^3)*

COMMENT 86: DRAFT PERMIT MODULE III.A.1.e, PAGE III-2

A. Draft Permit Module Text

the Permittees shall not store a TRU mixed waste container in the WHB Unit for more than one (1) year.

B. Discussion of Draft Permit Condition

The limitation on the length of time waste can remain in storage in the WHB is arbitrary and without basis. Derived waste containers may take tens of years to fill. Under this condition those containers would need to be emplaced after one year, creating unnecessary waste handling activity. The Permittees should be able to make judgments about when waste disposal will occur, based on radiological and other operational conditions.

C. Proposed Revision to Draft Permit Condition

1. Module III.A.1.e, Page III-2

Delete this condition.

COMMENT 87: DRAFT PERMIT MODULE III.A.2.b, PAGE III-3

A. Draft Permit Module Text

***Storage locations and quantities* - the Permittees shall store TRU mixed waste containers in any location within the Parking Area Unit, as specified in Table below. The Permittees may store quantities of TRU mixed waste containers within sealed TRUPACT-II shipping containers in these locations not to exceed the maximum capacities specified in Table below.**

Table - Parking Area Unit			
Description	*Area*	*Maximum Capacity*	*Container Equivalent*
Parking Area	*115,000 ft^2 (10,700 m^2)*	*1591 ft^3 (45 m^3)*	*12 TRUPACT-IIs*
Total	*--*	*1591 ft^3 (45 m^3)*	*12 TRUPACT-IIs*

B. Discussion of Draft Permit Condition

The quantities of CH TRU mixed waste stored on the parking lot are not sufficient to accommodate reasonably expected throughput rates and the receipt of waste over weekends. The quantity limits in the Permit Application better represent the throughput rates and should be used.

C. Proposed Revision to Draft Permit Condition

Modify the text in Module III.A, and related attachments as follows:

1. Module III.A.2.b, Page III-3

- the Permittees shall store TRU mixed waste containers in any location within the Parking Area Unit, as specified in Table III.A.2 below. The Permittees may store quantities of TRU mixed waste containers within sealed TRUPACT-II shipping containers or RH-TRU road casks in these locations not to exceed the maximum capacities specified in Table III.A.2 below.

Table - Parking Area Unit		
Description	*Area*	*Maximum Capacity*
Parking Area	*272,500 ft^2 (25,315 m^2)*	*4,773 ft^3 (135 m^3) CH-TRU* *126 ft^3 (4 m^3) RH-TRU*
Total	*--*	*4,899 ft^3 (139 m^3)*

2. Attachment M1, Page M1-6, Lines 29 to 37 and Page M1-7, Lines 1-12

The parking area south of the WHB (see Figure M1-2) will be used for storage of waste containers within sealed shipping containers awaiting unloading. The area extending south from the WHB within the fenced enclosure identified as the Radiological Control Area on Figure M1-2 is defined as the Parking Area Unit. This area provides space for 12 trailers loaded with TRUPACT-IIs and three loaded road casks or rail casks, corresponding to 4,773 ft^3 (135 m^3) of CH waste and 125.6 ft^3 (3.56 m^3) of RH waste. Secondary containment and protection of the waste containers from standing liquid are provided by the transportation containers. Wastes placed in the Parking Area Unit will remain sealed in their transportation containers while in this area.

The maximum number of TRUPACT-IIs that will be stored in the parking area is 36, containing a maximum of 72 SWBs or 504 drums of CH TRU mixed waste. The Nuclear Regulatory Commission (NRC) Certificate of Compliance requires that sealed TRUPACT-IIs, which contain waste, be vented every 60 days to avoid unacceptable levels of internal pressure. Typically, during normal operations the maximum residence time of any one container in the Parking Area Unit is five days. Therefore, during normal waste handling operations, no TRUPACT-IIs will require venting while located in the Parking Area Unit. Any off-normal event that might drive residence times in TRUPACT-IIs to 60 days or greater in this unit shall be handled in accordance with Section M1-1e(2) of this Permit Attachment. Under no circumstances shall a TRUPACT-II be stored in the Parking Area Unit for more than fifty-nine (59) days after the date that the inner containment vessel of the TRUPACT-II shipping container was sealed at the generator site.

3. Attachment F, Page F-7, Lines 1 to 16

Parking Area Container Storage Unit (Parking Area Unit)

The area extending south from the WHB across the rail sidings is defined as the Parking Area Container Storage Unit. This area provides space for 12 trailers loaded with TRUPACT-IIs corresponding to 4,773 ft^3 (135 m^3) of CH waste and three loaded road casks or rail casks, corresponding to 126 ft^3 (4 m^3) of RH waste. Secondary containment and protection of the waste containers from standing rainwater are provided by the transportation containers.

The maximum number of TRUPACT-IIs that will be stored in the Parking Area Unit is 36, containing a maximum of 72 SWBs or 504 drums of CH waste. The TRUPACT-II safety criteria require that they be opened and vented at a frequency of at least once every 60 days. Typically, during normal operations the maximum residence time of any one container in the Parking Area Unit is five days. Therefore, during normal waste handling operations, TRUPACT-IIs will not require venting while located in the Parking Area Unit. Any off-normal event that drives residence times to 60 days or greater in this storage area shall be mitigated by returning the shipment to the generator prior to the expiration of the 60 day NRC venting period or by moving the TRUPACT-IIs or RH casks inside the WHB Unit where the waste will be removed and placed in one of the permitted storage areas.

COMMENT 88: DRAFT PERMIT MODULE III.A.2.d, PAGE III-3

A. Draft Permit Module Text

the Permittees shall not store or manage empty TRUPACT-II shipping containers in the Parking Area Unit.

B. Discussion of Draft Permit Condition

This condition has no regulatory basis and will create unnecessary logistical problems at the WIPP facility. First, the condition is limited to empty TRUPACT-IIs. As such, the containers pose no risk and contain no hazardous substances of regulatory concern. Thus there is no regulatory justification for this specific control over empty containers, nor is there any justification based on protection of human health or the environment. Furthermore, the condition would require the empty TRUPACT-II containers to be taken outside the Parking Area Unit in order to be loaded for return to the generator/storage sites. Logistically, this prevents the efficiencies which would exist without this condition. For example, depending upon turnaround requirements, empty TRUPACTs may be loaded on trailers for delivery to generator/storage sites either inside or outside of the radioactive materials area (RMA). Without this condition, a trailer inside the RMA, once unloaded, may be loaded with empties for immediate turnaround. Under this condition, the TRUPACTs and/or the trailer must be driven the extra distance out of the RMA just to be brought back into the RMA to be reloaded. This is counterproductive and adds risk by unnecessarily moving vehicles and large equipment into and out of the RMA.

C. Proposed Revision to Draft Permit Condition

1. Module III.A.2.d, Page III-3

Delete this condition.

COMMENT 89: DRAFT PERMIT MODULE III.A.2.e, PAGE III-3

A. Draft Permit Module Text

***-the Permittees shall store the TRUPACT-II shipping containers on TRUPACT-II trailers*.**

B. Discussion of Draft Permit Condition

This condition is arbitrary and has no regulatory basis. First, it is safe to place TRUPACT-IIs on the ground because the containers provide secondary containment for the waste inside. Second, this condition adversely impacts maintenance and operations. At times, a trailer will need to be readied for re-use, maintenance, or repair, and it will be necessary to off-load the TRUPACT-IIs while these activities are underway. This condition reduces the maintenance options available for trailers.

C. Proposed Revision to Draft Permit Condition

1. Module III.A.2.e, Page III-3

Delete this condition.

COMMENT 90: DRAFT PERMIT MODULE III.H, PAGE III-6

A. Draft Permit Module Text

At closure of the WHB Unit and Parking Area Unit, the Permittees shall remove all hazardous waste and hazardous waste residues, in accordance with the procedures in the Closure Plan, Permit Attachment I and Permit Condition II.L, as required by 20 NMAC 4.1.500 (incorporating 40 CFR §§264.111 and 264.178).

B. Discussion of Draft Permit Condition

The inclusion of the term "all" in this condition is problematic. The removal of hazardous waste and hazardous waste residues will occur in accordance with written procedures which will specify the appropriate clean-up level and the extent to which removal is needed to protect human health and the environment. The Permit should reflect this fact.

C. Proposed Revision to Draft Permit Condition

1. Module III.H, Page III-6

At closure of the WHB Unit and Parking Area Unit, the Permittees shall remove hazardous waste and hazardous waste residues, in accordance with the procedures in the Closure Plan, Permit Attachment I and Permit Condition II.L, as required by 20 NMAC 4.1.500 (incorporating 40 CFR §§ 264.111 and 264.178).

COMMENT 91: DRAFT PERMIT MODULE III.I, PAGE III-6

A. Draft Permit Module Text

The Permittees shall place the results of waste analyses in the operating record as specified in Permit Condition II.K.

B. Discussion of Draft Permit Condition

This condition is unclear. The "results of waste analysis" have been divided among the generator/storage sites and the WIPP based on the use of the records in decision making regarding the acceptability of the waste for shipment to the WIPP. For example, the records associated with the determination of hazardous waste are provided by the generator/storage sites. The WIPP will not receive the results of waste analyses, other than what is entered into the WWIS or what is used at a summary level to review and approve Waste Stream Profile Forms. However, the WIPP will maintain records associated with the review of the generators' processes for making such determinations and the review of the results of the generators' application of their processes. The scope of this condition should be narrowed consistent with the records provisions in the Permit Application.

C. Proposed Revision to Draft Permit Condition

1. Module III.I, Page III-6

Change the condition to read as follows:

The Permittees shall place in the operating record, analytical results used to obtain the results of waste screening for acceptance and which are reported to the Permittees in the WWIS, as specified in Permit Condition II.K.

2.3.2 Comments on Attachments B, D, D1, I

Specific comments on these sections were included with Module II and have not been repeated for Module III.

2.3.3 Comments on Attachments M1 and M2

Comments on these Attachments are included with the Module III comments as appropriate. There are no other specific comments on these attachments, however, there are editorial comments, and comments that modify, clarify, or supplement the text in the DOE's Permit Application which are contained in the Redline/Strikeout version of the Draft Permit.

2.4 Module IV and Attachments

COMMENT 92: DRAFT PERMIT MODULE IV.A.1.b

A. Draft Permit Module Text

-the Permittees shall dispose TRU mixed waste containers in three (3) Underground HWDUs, as specified in Table IV.A.1 below and depicted in Permit Attachment M2, Figure M2-1. The Permittees may dispose quantities of TRU mixed waste containers in these locations not to exceed the maximum capacities specified in Table IV.A.1 below.

B. Discussion of Draft Permit Condition

The Permittees intend to use 8 waste panels and the associated entries for the disposal of TRU and TRU mixed waste at the WIPP. While the Permittees plan to mine and fill the panels in the order stated in the Permit Application, restrictions on the mining order removes any flexibility to manage the underground facility and to make decisions on the best use of the facility. Consequently, the limitation to Panels 2, 3, 4, 9, and 10 should be eliminated.

C. Proposed Revision to Draft Permit Condition

1. Module IV.A.1.b, Page IV-1

-the Permittees may construct and use for disposal any of the planned areas in the WIPP underground. The Permittees may dispose of quantities of TRU mixed waste containers in these locations not to exceed the maximum capacities of 636, 000 cubic feet (18,000 cubic meters) of waste per waste panel.

2. Module IV.A.1.b, Table IV.A.1, Page IV-1

Delete this table.

3. Module IV.E.2, Page IV-4

The Permittees may excavate any Underground HWDU, as depicted in Permit Attachment M2, Figure M2-1, "Repository Horizon", and specified in Section M2-2a(3), "Underground Hazardous Waste Disposal Units (HWDUs)".

4. Attachment M2, Page M2-1, Lines 17 to 36

The WIPP geologic repository is mined within a 2,000-feet (ft) (610-meters (m))-thick bedded-salt formation called the Salado Formation. The Underground HWDUs (miscellaneous units) are located 2,150 ft (655 m) beneath the ground surface. TRU mixed waste management activities underground will be confined to the southern portion of the 120-acre (48.5 hectares) mined area during the Disposal Phase. Disposal of containers of TRU mixed waste will occur in HWDUs designated as Panels 1 through 8 (See Figure M2-

1). In addition, disposal of containers of TRU mixed waste may occur in the north-south entries marked as E-300, E-140, W-30, and W-170, between S-1600 and S-3650. These areas are referred to as the disposal area access drifts and have been designated as Panels 9 and 10 in Figure M2-1.

Each panel consists of seven rooms and two access drifts. Access drifts connect the rooms and have the same cross section (see Section M2-2a(3)). The closure system installed in each HWDU after it is filled will prevent anyone from entering the HWDU and will stop ventilation airflow. The point of compliance for air emissions from the Underground is Sampling Station VOC-A, as defined in Permit Attachment N (Confirmatory Volatile Organic Compound Monitoring Plan)

5. Attachment M2, Page M2-2, Lines 15 to 18

*The HWDUs (Figure M2-1) provide room for a total of 6,200,000 cubic feet (ft^3) (176,000 meters (m^3)) of TRU mixed waste. The CH TRU mixed waste containers (typically, 7-packs and standard waste boxes (**SWBs**)) may be stacked three-high across the width of the room. Canisters of RH TRU mixed waste are placed in holes in the wall of the rooms*.

6. Attachment M2, Page M2-7, Lines 12 to 38, and Page M2-8, Lines 1 to 7

During the term of this Permit, the volume of TRU mixed waste emplaced in the repository will not exceed 1,908,000 ft^3 (54,000 m^3).

Main entries and cross cuts in the repository provide access and ventilation to the HWDUs. The main entries link the shaft pillar/service area with the TRU mixed waste management area and are separated by pillars. Normal entries are 13 ft (4.0 m) high and 14 ft (4.3 m) wide. Each of the Underground HWDUs labeled Panels 1 through 3 will have seven rooms. The locations of these HWDUs are shown in Figure M2-1. The rooms will have nominal dimensions of 13 ft (4.0 m) high by 33 ft (10 m) wide by 300 ft (91 m) long and will be supported by 100 ft (30 m) wide pillars.

As currently planned, future permit modifications may allow disposal of additional volumes of TRU mixed waste. If waste volumes disposed of in the eight panels fail to reach the stated design capacity, the Permittees may dispose of TRU mixed waste in the four main entries and crosscuts adjacent to the waste panels (referred to as the disposal area access drifts). These areas are labeled Panels 9 and 10 in Figure M2-1. This Permit allows only the construction of any underground areas needed to support efficient operation of the WIPP facility.

Panel 1 was excavated from 1986 to 1988, and may be the first HWDU to be used for waste disposal. The panels may be mined in any order determined by the Permittees for the efficient operation of the WIPP facility.

COMMENT 93: DRAFT PERMIT MODULE IV.B.1, PAGE IV-2

A. Draft Permit Module Text

The Permittees may dispose TRU mixed waste in the Underground HWDUs, provided the Permittees comply with the following conditions:

IV.B.1.a ***Waste analysis plan - the TRU mixed waste shall be characterized to comply with the waste analysis plan specified in Permit Condition II.C.1.***

IV.B.1.b ***Waste acceptance criteria - the TRU mixed waste shall comply with the waste acceptance criteria specified in Permit Condition II.C.2.***

IV.B.1.c ***Hazardous waste codes - the TRU mixed waste shall contain only hazardous waste codes specified in Permit Condition II.C.3.***

B. Discussion of Draft Permit Condition

This condition does not allow the disposal of waste generated from the operation of the WIPP, or derived waste, since derived waste is not addressed in subsections (a), (b) and (c) which reference Module II.C.1, II.C.2, or II.C.3. Derived waste will comply with the conditions enumerated in Module II.C.2.a through II.C.2.l, except that containers of derived waste will not undergo headspace sampling (II.C.2.i), and so may be disposed in accordance with II.C.4.

C. Proposed Revision to Draft Permit Condition

1. Module IV.B.1, Page IV-2

Add the following condition:

IV.B.1.d. Derived Waste - derived waste may be disposed in the HWDUs as defined in II.C.4

COMMENT 94: DRAFT PERMIT MODULE IV.D.1, Page IV-3

A. Draft Permit Module Text

The average concentration of VOCs in any single room within an Underground HWDU shall not exceed the limits specified in Table IV.D.1 below:

Compound	*VOC Room-Based Concentration Limit (PPMV)*
Carbon Tetrachloride	***1680***
Chlorobenzene	***1470***
Chloroform	***1300***
1,1-Dichloroethene	***3150***
1,2-Dichloroethane	***1325***
Methylene Chloride	***6060***
1,1,2,2-Tetrachloroethane	***1420***
Toluene	***3600***
1,1,1-Trichloroethane	***5630***

There are no maximum concentration limits for other VOCs.

B. Discussion of Draft Permit Condition

The Draft Permit establishes a series of numeric "room-based" VOC concentration limits, and requires room concentrations to be at or below those levels. These concentrations are significantly lower than necessary to protect human health and the environment, and are also far below the levels proposed in the Permit Application. The limits are inappropriate for two reasons. First, the Draft Permit does not describe how "room-based" VOC concentrations should be measured. It is not feasible, and probably impossible, to measure the concentration accurately by any method because of the ventilation system and air flow through the room. Second, the limits are inappropriate because the room-based VOC limits in the Permit Application are well below both the EPA standards for environmental exposures, and OSHA standards for occupational exposures. There is no basis for the limits included in the Draft Permit and the levels are much more stringent than necessary to protect human health and the environment.

The Permit Application correctly identifies EPA's health-based risk assessment limits and the OSHA time weighted average exposure limits as the appropriate regulatory standards to use in determining whether operation, maintenance, and closure of the miscellaneous unit will be protective of human health and the environment. The Permittees' proposed VOC monitoring approach is valid for two reasons:

(1) It is consistent with environmental limits imposed by the EPA. Using the EPA risk assessment methods, the Permit Application demonstrated that the proposed VOC concentration limits for both carcinogens and non-carcinogens are protective of human health and the environment. The analysis in Appendix D9 of the Permit Application first identified the type of human receptors that are

theoretically able to receive the largest chronic dose. This was determined to be a hypothetical resident who constructs and occupies a house on the WIPP site boundary. There are no such individuals and the analysis reflects a worst-case scenario, because the construction of residences closer than the boundary is prohibited under the WIPP Land Withdrawal Act and the DOE's management of the land. Maximum average container headspace concentrations were then determined and maximum permissible exposures were calculated in accordance with EPA's public health risk policy (e.g., a one in one million chance of developing cancer for exposure to carcinogenic materials and a hazard index of less than one for non-carcinogens). This analysis showed that, in all cases, exposures would be well below acceptable levels.

(2) The Permittees have demonstrated that they will meet applicable worker safety requirements. The Permittees use the OSHA time weighted averages as the applicable standard in the Permit Application. The Permittees demonstrated in the Application that these standards are met with the container headspace limits in the Permit Application. Establishment of vastly lower VOC limits in the Draft Permit is unnecessary to protect workers from exposures to excessive levels of VOCs. The "room-based' concentration approach does not account for exposures to individuals at all, much less whether workers will be exposed to any significant VOC levels. The limits are therefore more stringent than necessary to protect human health.

Thus, the VOC concentration limits proposed in the Permit Application should be incorporated into the final permit because they meet all relevant health-based regulatory standards. In addition, the permit should specify the limits in terms if the average of the headspace concentration in the containers in a room.

C. <u>Proposed Revision to Draft Permit Condition</u>

1. Module IV.D.1, Table IV.D.1, Page IV-3

Replace the table with the following:

Compound	*VOC Headspace Concentration Limits (PPMV)*
Carbon Tetrachloride	*7,510*
Chlorobenzene	*17,660*
Chloroform	*6,325*
1,1-Dichloroethene	*28,750*
1,2-Dichloroethane	*9,100*
Methylene Chloride	*100,000*
1,1,2,2-Tetrachloroethane	*7,924*
Toluene	*41,135*
1,1,1-Trichloroethane	*100,000*

COMMENT 95: DRAFT PERMIT MODULE IV.E, PAGE IV-4

A. Draft Permit Module Text

IV.E.1.a Submittal of design drawings

for each Underground HWDU not yet constructed, the Permittees shall submit to the Secretary:

> ***i. detailed engineering reports and engineering and design drawings for the proposed excavation of the Underground HWDU; and***
>
> ***ii. a certification signed by a New Mexico registered professional engineer, stating the design complies with the Permit and conforms with the disposal room design appended as Permit Attachment M3 (Drawing Number 51-W-214-W, "Underground Facilities Typical Disposal Panel").***

B. Discussion of Draft Permit Condition

Condition IV.E.1.a is unnecessary. Each HWDU to be mined will be identical to the HWDU currently being mined and to the drawing in Attachment M3 (Drawing Number 5.1-W-214-W, “Underground Facilities, Typical Disposal Panel”). Panels mined in the future will not be redesigned and there is no reason for the initial design to be certified after the fact. Therefore, the requirement in IV.E.1.a for certification is inapplicable and unnecessary. If a design change is found to be necessary in the future, the new design drawing will be certified by a professional engineer licensed in the state of New Mexico and submitted to the NMED for review through the design modification process.

C. Proposed Revision to Draft Permit Condition

1. Module IV.E.1.a., Page IV-4

Delete is conditions.

COMMENT 96: DRAFT PERMIT MODULE IV.E.2, PAGE IV-4

A. Draft Permit Module Text

Subject to Permit Condition IV.E.1, the Permittees may excavate the following Underground HWDUs, as depicted in Permit Attachment M2, Figure M2-1, "Repository Horizon", and specified in Section M2-2a(3), "Underground Hazardous Waste Disposal Units (HWDUs)":

Panel 10 (Disposal area access drift)
Panel 2
Panel 9 (Disposal area access drift)
Panel 3
Panel 4

Prior to disposal of TRU mixed waste in a newly constructed Underground HWDU, the Permittees shall comply with the certification requirements specified in Permit Condition I.D.13.

B. Discussion of Draft Permit Condition

Module I.D.13 should not apply to disposal in a newly constructed HWDU, which is a permitted activity. The purpose of Module I.D.13 addresses facility modifications that are not required to be included in the permit. Requiring certification pursuant to I.D.13 for permitted activities extends the scope of Condition I.D.13 beyond what the regulations (20 NMAC 4.1.900 40 CFR §270.30(1)(2))mandate.

C. Proposed Revision to Draft Permit Condition

1. Module IV.E.2, Page IV-4

The Permittees may excavate any Underground HWDU, as depicted in Permit Attachment M2, Figure M2-1, "Repository Horizon", and specified in Attachment M2, Section M2-2a(3), "Underground Hazardous Waste Disposal Units (HWDUs)".

COMMENT 97: DRAFT PERMIT MODULE IV.E.3.a, PAGE IV-4

A. Draft Permit Module Text

-the Permittees shall restrict and separate the ventilation and traffic flow areas in the underground TRU mixed waste handling and disposal areas from the ventilation and traffic flow areas for mining and construction equipment as specified in Permit Attachment G (Traffic Patterns), Figure G-4. TRU mixed waste handling and disposal traffic shall use the waste area intake ventilation drift to access the Underground HWDUs. Mining and construction equipment traffic shall use the construction area exhaust ventilation drift to access the mining and construction areas.

B. Discussion of Draft Permit Condition

The following statement in this condition should be clarified: "Mining and construction equipment traffic shall use the construction area exhaust ventilation drift to access the mining and construction areas" is inaccurate because it infers that only W-170 (exhaust) can be used. The Permittees intend to use both W-170 and W-30 because W-30 is the intake ventilation drift, both W-170 and W-30 for access will be free from the possibility of waste-related contamination.

C. Proposed Revision to Draft Permit Condition

The condition should be revised as follows:

1. Module IV.E.3.a, Page IV-4

-the Permittees shall separate the ventilation and traffic flow in the underground waste handling, mining, and construction areas, restricting each activity, as far as possible, to its own traffic and ventilation area.

COMMENT 98: DRAFT PERMIT MODULE IV.E.3.b, PAGE IV-5

A. Draft Permit Module Text

***Backfill* - the Permittees shall use magnesium oxide (MgO) as a backfill material in each Underground HWDU, as specified by Permit Attachment M2, Section M2-2a(1), "Backfill".**

B. Discussion of Draft Permit Condition

Requiring backfill as part of hazardous waste management activities in the repository is unnecessary. Backfill has been specified to alter the solubility of radionuclides, in the event a disposal room becomes saturated. Backfill does not impact the performance of the hazardous waste or hazardous constituents in the repository during operations, closure, or the 30-year post-closure period. Furthermore, backfill is shown in the Application to have a negligible impact on panel closure performance. Finally, Appendix C1 of the Application demonstrated that backfill is compatible with the mixed waste and its components. Therefore, the backfill requirement should be deleted from the permit.

C. Proposed Revision to the Draft Permit Condition

1. Module IV.E.3.b., Page IV-5

Delete this condition.

2. Attachment M2, Page M2-3, Lines 22 to 38 and Page M2-4, Lines 1 to 26

*The Permittees may use a backfill in order to provide chemical control over the solubility of radionuclides in order to comply with the requirements of 40 CFR §191.13. The currently preferred backfill, Magnesium Oxide (**MgO**), is compatible with the mixed waste. No hazardous waste would result from a spill of backfill.*

The MgO backfill will be purchased and received in appropriate containers for emplacement in the facility. Quality assurance requirements, such as material quality and quantity, will be addressed by using current quality assurance procedures in the procurement process and receipt inspection. The filled containers will be shipped by road or rail and will be delivered underground using current shaft and material handling procedures and processes. Backfill will be placed in a reasonable distribution within the waste stack. No new equipment or training of operators is necessary for managing backfill in this operation.

Quality control will be provided within the waste handling operating procedures to record that the backfill is placed in accordance with applicable specifications. Backfill management practices utilize existing waste handling techniques and equipment, and eliminate operational problems such as dust creation and the introduction of additional equipment and operations into waste handling areas. There are no mine operational considerations (e.g. ventilation flow and control) associated with backfill use.

COMMENT 99: DRAFT PERMIT MODULE IV.E.3.c, PAGE IV-5

A. Draft Permit Module Text

-the Permittees shall maintain a minimum mine ventilation exhaust rate of 425,000 standard ft^3/min and a minimum active room ventilation rate of 35,000 standard ft^3/min, as specified in Permit Attachment M2, Section M2-2a(3), "Underground Ventilation System Description" and as required by 20 NMAC 4.1.500 (incorporating 40 CFR §264.601(c)).

B. Discussion of Draft Permit Condition

This condition is inconsistent with Attachment M2 and allows no flexibility in mine ventilation operation. Attachment M2, which is consistent with the Permit Application, states that the ventilation system may operate at various flow rates depending upon the scope of underground activities. Attachment M2 will allow ventilation rates that are less than the rates specified in this condition, as necessary. This flexibility is needed, as noted in Attachment M2 for the safe and efficient management of the underground.

C. Proposed Revision to Draft Permit Condition

1. Module IV.E.3.c, Page IV-5

The Permittees shall maintain the mine ventilation exhaust rate and active room ventilation rate as specified in permit Attachment M2, Section M2-2a(3), Subsurface Structures, and as required by 20 NMAC 4.1.500 (incorporating 40 CFR § 264.601 (c)).

COMMENT 100: DRAFT PERMIT MODULE IV.E.3.d, PAGE IV-5

A. Draft Permit Module Text

-the Permittees shall construct bulkheads and brattice cloth air barricades in active Underground HWDUs to prevent the flow of mine ventilation air through the full disposal rooms, as specified in Permit Attachment M2, Section M2-2a(3), "Underground Ventilation System Description" and as required by 20 NMAC 4.1.500 (incorporating 40 CFR §264.601(c)).

B. Discussion of Draft Permit Condition

The term "bulkheads" is inappropriate in this condition. The WIPP will use one ventilation bulkhead per room to manage the flow of air through a room during operations. However, a full disposal room will be closed to remove it from the ventilation system. Room closure will not include bulkheads.

C. Proposed Revision to Draft Permit Condition

1. Module IV.E.3.d, Page IV-5

-filled rooms within Underground HWDUs shall be closed using an appropriate ventilation barricade to prevent the flow of mine ventilation air through the disposal room, as specified in Permit Attachment M2, Section M2-2a(3), "Underground Ventilation System Description" and as required by 20 NMAC 4.1.500 (incorporating 40 CFR § 264.601(c)).

COMMENT 101: DRAFT PERMIT MODULE IV.E.4, PAGE IV-5

A. Draft Permit Module Text

The Permittees shall implement a ground control program for each Underground HWDU, as specified in Permit Attachment M2, Sections M2-5a(1), "Ground-Control Program" and as required by 20 N.M.A.C. 4.1.500 (incorporating 40 CFR §264.601(c)).

B. Discussion of Draft Permit Condition

This condition potentially limits the ground control program to the "Ground Control Program" heading in Attachment M2, Section M2-5a(1). To avoid any possible confusion, the reference to the heading "Ground Control Program" should be deleted so that the entire discussion of the ground control program in Attachment M2, Section M2-5a(1) is clearly cross-referenced.

In addition, this condition incorporates Attachment M2 to describe the ground control program. Permit Attachment M2, Section 5a(1), "Ground-Control Program" needs to be revised to add remining/beam removal as a ground control remediation alternative because an unstable roof beam is removed up to the next competent layer. The Permittees have successfully demonstrated that removal of the roof beam is a viable ground control alternative. See the Long-Term Ground Control Plan for the Waste Isolation Pilot Plant, Section 5.2 and App. A, §A.4 (June 1998) (WIPP/WID-96-2180/Rev. 2). As such, the Draft Permit should be revised to explicitly authorize remining/removal of the roof beam as a ground control alternative.

C. Proposed Revision to Draft Permit Condition

1. Module IV.E.4, Page IV-5

The Permittees shall implement a ground control program for each Underground HWDU, as specified in Permit Attachment M2, Section M2-5a(1), and as required by 20 NMAC 4.1.500 (incorporating 40 CFR § 264.601(c)).

2. Attachment M2, Page M2-17, Line 19

Excavation Alternatives

Excavation alternatives with respect to existing openings generally include complete removal of the roof beam. Roof beam removal is not a support system but a mining alternative to ground support. The beam removal up to the next competent layer is considered when adequate support cannot be provided in a cost-effective manner or if removal of the beam will result in a safer working environment. In existing drifts with anticipated long lives, creep closure may ultimately require additional excavation to maintain operational clearance.

COMMENT 102: DRAFT PERMIT MODULE IV.F.1.b, PAGE IV-5

A. Draft Permit Module Text

-the Permittees shall submit to the Secretary an annual report, beginning twelve (12) months after issuance of this Permit, evaluating the geomechanical monitoring program and all geomechanical data collected from each Underground HWDU during the previous year, as specified in Permit Attachment M2, Section M2-5b(2), "Geomechanical Monitoring."

B. Discussion of Draft Permit Condition

This reporting requirement is unnecessarily duplicative. The NMED will receive reports of any noncompliance or release which may endanger human health or the environment pursuant to Module I.D.15. In addition, routine results for the geomechanical monitoring program are placed in the operating record and are available for inspection. Finally reports that interpret the geotechnical data record are prepared annually for the DOE. At a minimum, the use of the term “all” is too broad in this context.

C. Proposed Revision to Draft Permit Condition

A. Module IV.F.1.b, Page IV-5

This condition should be deleted in its entirety or the term “all” should be deleted.

COMMENT 103: DRAFT PERMIT MODULE IV.F.2.a, PAGE IV-5

A. Draft Permit Module Text

***-the Permittees shall implement the Confirmatory VOC Monitoring Plan specified in Permit Attachment N (Confirmatory Volatile Organic Compound Monitoring Plan) and as required by 20 NMAC 4.1.500 (incorporating 40 CFR §264.602 and §264.601(c)). The Permittees shall implement this plan within thirty (30) calendar days of issuance of this Permit until six (6) months after the certified closure of all Underground HWDUs*.**

B. Discussion of Draft Permit Condition

The VOC Confirmatory Monitoring Plan as specified by the NMED is excessive and unnecessary. In its guidance for determining the risks associated with emissions into ambient air, the EPA points out that if an applicant can demonstrate that compliance with health-based standards is achieved by at least one order-of-magnitude, then the follow up monitoring requirements are unnecessary. The Permittees have demonstrated that, even under a worst-case scenario, public exposure to VOCs will never be more than one order-of-magnitude below acceptable levels. Therefore, compliance monitoring is not needed and should be eliminated from the permit. Instead, the original purpose of using VOC monitoring to confirm the modeling should be reinstated.

Specifically, the VOC Monitoring Plan set forth in the Draft Permit, is excessive for the following reasons:

(1) There are generally two methods to achieve compliance with environmental performance standards: (a) perform compliance monitoring and adjust system parameters if emissions exceed permitted levels. This, is the approach in the Draft Permit; or (b) control the quantity of VOCs in the waste so that there are never sufficient quantities of VOCs in the disposal unit to cause an exceedence of the limit. This is the approach in the Permit Application. The Draft Permit requires both approaches which is excessively restrictive and unnecessary. If the NMED chooses to maintain the compliance monitoring approach, then the only requirement for waste characterization should be to identify the proper hazardous waste codes using acceptable knowledge and solids sampling when needed and to assure that no prohibited items are present through acceptable knowledge and real time radiography. Therefore, compliance monitoring in the permit safely eliminates the need for headspace gas sampling at the generator/storage sites. On the other hand, if the NMED chooses to maintain headspace gas sampling to demonstrate that the average values are below some limiting value, then compliance monitoring is unnecessary and should be eliminated. Using redundant processes (sampling and monitoring) provides no additional protection of human health and the environment, since the result of either is the same level of compliance.

(2) Monitoring emissions from panel 1 is sufficient to confirm whether VOC emissions are an issue. Monitoring other panels is unnecessary and duplicative. The Permit Application demonstrated that, under worst-case condition, VOC

emissions from an individual panel can never be as high as the average VOC concentration in the drum headspace. The monitoring program for Panel 1 was proposed only to confirm the modeling data presented in the Application, which established that VOCs will not be emitted in significant quantities. If the data from Panel 1 confirms the model, it will confirm the model for all panels and there will be no need to conduct modeling from other panels until and following closure.

(3) Post-closure monitoring is unnecessary because there is no possible pathway for a VOC release after closure. Closure of each panel will involve sealing off the ventilation system leading from the disposal area to the outside atmosphere. This will seal off any VOC migration pathway. Furthermore, monitoring for 6-months after closure of the last panel may interfere with final facility closure. As provided for in the Closure Plan, the Permittees intend to close the last panel after surface decommissioning and decontamination activities are competed and all resulting TRU mixed waste is disposed. The Permittees will then begin removing remaining underground services (power, compressed air, ventilation) in preparation for sealing the shafts. Keeping the VOC monitoring system on-line during this activity may interfere with the timely completion of these activities.

C. <u>Proposed Revision to Draft Permit Condition</u>

1. Module IV.F.2.a, Page IV-6

-the Permittees shall implement the VOC Confirmatory Monitoring Plan specified in Permit Attachment N (Confirmatory Volatile Organic Compound Monitoring Plan) for Panel 1 and as required by 20 NMAC 4.1.500 (incorporating 40 CFR § 264.602 and § 264.601(c)). The Permittees shall implement this plan until a minimum of six months after the closure of Panel 1.

2. Attachment J, Page J-2, Lines 19 to 21

The VOC Confirmatory Monitoring Plan shall include the collection of air samples upstream of panel 1 (background), and down stream of Panel 1 beginning just prior to waste emplacement and proceeding until six (6) months after closure of Panel 1. Confirmation of the VOC emission levels is demonstrated using the difference between VOC concentrations downstream and upstream of Panel 1.

COMMENT 104: DRAFT PERMIT MODULE IV.F.2.c, PAGE IV-7

A. Draft Permit Module Text

-the Permittees shall notify the Secretary in writing, within five (5) working days of obtaining validated analytical results, whenever the concentration of any VOC specified in Table IV.D.1 exceeds the concentration of concern specified in Table IV.F.2.c below.

The Permittees shall notify the Secretary in writing, within five (5) working days of obtaining validated analytical results, whenever the running annual average concentration (calculated after each sampling event) for any VOC specified in Table IV.D.1 exceeds the concentration of concern specified in Table IV.F.2.c below.

B. Discussion of Draft Permit Condition

VOC "concentrations of concern" in the Draft Permit are substantially less than the Permit Application Appendix D20 values. The Permit Application correctly identifies EPA's health based concentration limits and the OSHA time weighted average exposure limits as the appropriate regulatory standards to use in determining whether operation, maintenance and closure of the miscellaneous unit will be protective of human health and the environment. Without explanation or justification, the NMED has set the VOC concentrations of concern significantly lower than necessary to protect human health and the environment. The Draft Permit VOC concentration levels are therefore unjustified and unnecessary and consequently below established health-based levels.

In its guidance on no-migration petitions the EPA clearly distinguishes between the need to comply with OSHA standards for occupational exposures, and the public and environmental exposure limits established by the EPA. Clearly, the EPA considers it improper to apply environmental exposure limits to workers. This approach makes sense for at least two reasons: 1) worker exposures are generally short term and not chronic doses that would be received by a nearby resident or other member of the public; and, 2) worker exposures are totally controllable and preventable, while environmental exposures are generally not controllable or preventable. Therefore, any environmental performance standard that reduces public exposure to limits less than those health-based limits established by the EPA is arbitrary.
The 2nd column of Table IV.F.2.c is incorrectly labeled "Concentration of Concern at Station VOC-A (PPBV)". It should read "Concentration of Concern at Drift E-300 (PPBV)".

C. Proposed Revision to Draft Permit Condition

1. Module IV.F.2.c. Table IV.F.2.c, Page IV-7

Replace this table with the following:

Compound	*Drift E-300 Concentration*	
	ug/m^3	*ppbv*
1,1-Dichloroethylene	*1,700*	*430*
Carbon tetrachloride	*570*	*90*
Methylene chloride	*18,000*	*5,200*
Chloroform	*370*	*76*
1,1,2,2-Tetrachloroethane	*1,500*	*210*
1,1,1-Trichloroethane	*8,500,000*	*2,300,000*
Chlorobenzene	*170,000*	*37,000*
1,2,-Dichloroethane	*330*	*81*
Toluene	*3,400,000*	*900,000*

COMMENT 105: DRAFT PERMIT MODULE IV.H.2, PAGE IV-8

A. Draft Permit Module Text

The Permittees shall maintain, in the operating record, a record identifying the types and quantities of TRU mixed waste in each Underground HWDU and the disposal location of each container or container assembly (e.g., a 7-pack of standard 55-gallons drums) within each Underground HWDU, using the following fields from the WWIS data dictionary:

1. ***Panel Number***
2. ***Room Number or Drift Number***
3. ***Row Number***
4. ***Column Number***
5. ***Column Height***
6. ***Container Type Code***
7. ***Container Identification Number***
8. ***Manifest Document Number***
9. ***Disposal Date***

B. Discussion of Draft Permit Condition

The requirement that the information regarding the location of the waste in the underground be included in the WWIS exceeds the regulatory requirements of 20 NMAC 4.1.500 (incorporating 40 CFR § 264.73(b)(2)) which requires only that the information be recorded on a map with a cross-reference to the specific manifest number, if the waste is accompanied by a manifest. Requiring that this information be placed in the WWIS does not further protect human health or the environment.

C. Proposed Revision to Draft Permit Condition

1. Module IV.H.2, Page IV-8

The Permittees shall maintain, in the operating record, a map or diagram identifying the types and quantities of TRU mixed waste in each Underground HWDU and the disposal location of each container or container assembly (e.g., a 7-pack of standard 55-gallons drums) within each Underground HWDU. The information on the diagram or map must cross reference the specific manifest number that accompanied the waste, if the waste is accompanied by a manifest.

2.4.2 Comments on Attachments D, D1, I1, I2, M1, M2, M3, and N

Comments on these Attachments are included with comments in Module IV and with other modules as appropriate. There are no other specific comments on these attachments, however, there are editorial comments, and comments that modify, clarify, or supplement the text in the DOE's Permit Application which are included in the Redline/Strikeout version of the Draft Permit.

2.4.3 Comments on Attachment G

COMMENT 106: DRAFT PERMIT ATTACHMENT G, PAGE G-2, LINES 39 TO 40 AND PAGE G-3, LINES 1 TO 3

A. <u>Draft Permit Attachment Text</u>

Each facility pallet will accommodate four seven-packs, four SWBs, four four-packs of 85-gallon drums, or two TDOPs. Waste containers will be secured to the facility pallet prior to transfer. A forklift will transport the loaded facility pallet to the conveyance loading car inside the air lock at the Waste Shaft (Figure G-3). The conveyance loading car will be driven onto the waste hoist deck, where the loaded facility pallet will be transferred to the waste hoist, and the loading car will be backed out.

B. <u>Discussion of Draft Permit Condition</u>

Requiring that waste containers be secured to the facility pallet significantly increases the potential for workers to receive the greatest radioactive dose due to the close proximity of the worker to the waste container, and should not be required. To ensure that tie-downs were not required, a load test was performed using the U/G transporter and simulated waste. The simulated waste containers were weighted to the maximum weight and then transported at full speed both up and down a bumpy, 6 degree grade without tie-downs. During the test, the simulated waste did not move. This test was written as an engineering work package and handled, released, and filed as a normal work package. Deleting this requirement reduces hazards to the worker.

C. <u>Proposed Revision to Draft Permit Condition</u>

1. Attachment G, Page G-2, Lines 39 and 40 and Page G-3, Lines 1 to 3

Each facility pallet will accommodate four seven-packs, four SWBs, four four-packs of 85-gallon drums, or two TDOPs, or any combination thereof. A forklift will transport the loaded facility pallet to the conveyance loading car inside the air lock at the Waste Shaft (Figure

G-3). The conveyance loading car will be driven onto the waste hoist deck, where the loaded facility pallet will be transferred to the waste hoist, and the loading car will be backed out.

2. Attachment M1, Page M1-6, Lines 16 to 27

The facility pallet is a fabricated steel unit designed to support 7-packs of drums, SWBs, TDOPs, or groups of overpack drums, and has a rated load of 25,000 lbs. (11,430 kg). The facility pallet will accommodate up to four 7-packs of drums or four SWBs (in two stacks of two units), two TDOPs, two groups of overpack drums (maximum of four drums per group) or any combination thereof. Facility pallets are shown in Figure M1-10. Fork pockets in the side of the pallet allow the facility pallet to be lifted and transferred by forklift to prevent direct contact between TRU mixed waste containers and forklift tines. This arrangement reduces the potential for puncture accidents. The WIPP facility operational documents define the operational load of the facility pallet as the contents of two TRUPACT-IIs. Since the maximum TRUPACT-II load is 7,265 lbs (3,300 kg), the maximum weight of a loaded facility pallet is less than 19,000 lbs (8,630 kg), including the pallet weight.

3. Attachment M2, Page M2-3, Lines 8 to 20

The facility pallet is a fabricated steel unit designed to support 7-packs of drums, SWBs, ten- drum overpacks (TDOPs), or groups of overpack drums, and has a rated load of 25,000 pounds (lbs.) (11,430 kilograms (kg)). The facility pallet will accommodate up to four 7-packs of drums or four SWBs (in two stacks of two units), two TDOPs, two groups of overpack drums (maximum of four drums per group) or any combination thereof. Facility pallets are shown in Figure M2-3. Fork pockets in the side of the pallet allow the facility pallet to be lifted and transferred by forklift to prevent direct contact between TRU mixed waste containers and forklift tines. This arrangement reduces the potential for puncture accidents. The WIPP facility operational documents define the operational load of the facility pallet as the contents of two Transuranic Package Transporter, Type IIs (TRUPACT-IIs). Since the maximum TRUPACT-II load is 7,265 lbs (3,300 kg), the maximum weight of a loaded facility pallet is less than 19,000 lbs (8,630 kg), including the pallet weight.

4. Attachment M2, Page M2-11, Lines 21 to 37

CH TRU mixed waste containers will arrive by tractor-trailer at the WIPP facility in sealed shipping containers (i.e., TRUPACT-IIs), at which time they will undergo security and radiological checks and shipping documentation reviews. The trailers carrying the shipping containers will be stored temporarily at the Parking Area Container Storage Unit (Parking Area Unit). A forklift will remove the TRUPACT-IIs from the transport trailers and will transport them into the Waste Handling Building Container Storage Unit for unloading of the waste containers. Each TRUPACT-II may hold up to two 7-packs, two SWBs, or one TDOP. An overhead bridge crane will be used to remove the waste containers from the TRUPACT-II and place them on a facility pallet. Each facility pallet has two recessed pockets to accommodate two sets of 7- packs, two sets of 4-packs or two SWBs stacked two-high, or two TDOPs or any combination thereof. A forklift will transport the loaded facility pallet to

the conveyance loading car inside the conveyance loading room adjacent to the Waste Shaft. The conveyance loading car will be driven onto the waste hoist deck, where the loaded facility pallet will be transferred to the waste hoist, and the loading car will be backed off. Containers of CH TRU waste (55-gal (208 L) drums, SWBs, 85-gal (321 L) drums, and TDOPs) can be handled individually, if needed, using the forklift and lifting attachments (i.e., drum handlers, parrot beaks).

2.5 Module V and Attachments

2.5.1 Comments on Module V

COMMENT 107: DRAFT PERMIT MODULE V.A

A. Draft Permit Module Text

This Module specifies the requirements of the Detection Monitoring Program (DMP). The DMP shall establish background ground-water quality and monitor indicator parameters, waste constituents, and reaction products that provide a reliable indication of the presence of hazardous constituents in the ground water, as required by 20 NMAC 4.1.500 (incorporating 40 CFR §§264.97 and 264.98). Indicator parameters, waste constituents, reaction products, and hazardous constituents hereinafter are referred to in this module as "parameters and/or constituents".

The DMP consists of seven (7) Detection Monitoring Wells (DMWs) located hydraulically upgradient and at the downgradient point of compliance of the WIPP Underground Hazardous Waste Disposal Units (Underground HWDUs). Six (6) DMWs are screened in the Culebra Member of the Rustler Formation; one (1) DMW is screened in the Dewey Lake Formation.

A DMP is necessary to demonstrate compliance with the environmental performance standard for the Underground HWDUs, as specified in 20 NMAC 4.1.500 (incorporating 40 CFR 264.601(a)). This environmental performance standard requires prevention of any releases that may have adverse effects on human health or the environment due to migration of waste constituents in the ground water or subsurface environment.

B. Discussion of Draft Permit Condition

Monitoring for “reaction products” is not applicable to the WIPP and is not legally required by applicable regulations. First, the WIPP is unaware of any reaction products from the WIPP waste that are a reliable indication of the presence of hazardous constituents. Instead, the WIPP samples and analyzes for a suite of hazardous constituents that could be associated with the waste set forth in Table V.D., to provide a reliable indication of the presence of hazardous constituents. Second, the term “reaction product” as used in Module V.A is unclear. If the term refers to reaction products that are used as indicator parameters to ensure that a valid (chemically stable and representative) sample is taken, then these are already included under the title "indicator parameters" and need not be repeated as reaction products.

Second, 20 NMAC 4.1.500 § 264.98(a) does not require monitoring for "reaction products" but allows for monitoring for indicator parameters, waste constituents, or reaction products to provide a reliable indication of the presence of hazardous constituents in groundwater. Since the WIPP's monitoring of indicator parameters and constituents in Table V.D provides a reliable indication of the presence of hazardous constituents, "reaction product" is redundant and should be deleted from Module V.A.

C. Proposed Revision to Draft Permit Condition

1. Module V.A, Page V-1

This Module specifies the requirements of the Detection Monitoring Program (DMP). The DMP shall establish background ground-water quality and monitor indicator parameters and waste constituents that provide a reliable indication of the presence of hazardous constituents in the ground water, as required by 20 NMAC 4.1.500 (incorporating 40 CFR §§ 264.97 and 264.98). Indicator parameters, waste constituents and hazardous constituents hereinafter are referred to in this module as "parameters and/or constituents."

The DMP consists of seven (7) Detection Monitoring Wells (DMWs) located hydraulically upgradient and at the downgradient point of compliance of the WIPP Underground Hazardous Waste Disposal Units (Underground HWDUs). Six (6) DMWs are screened in the Culebra Member of the Rustler Formation; one (1) DMW is screened in the Dewey Lake Formation.

A DMP is necessary to demonstrate compliance with the environmental performance standard for the Underground HWDUs, as specified in 20 NMAC 4.1.500 (incorporating 40 CFR 264.601(a)). This environmental performance standard requires prevention of any releases that may have adverse effects on human health or the environment due to migration of waste constituents in the ground water or subsurface environment.

COMMENT 108: DRAFT PERMIT MODULE V.B, PAGE V-1

A. Draft Permit Module Text

The point of compliance is the vertical surface located at the hydraulically downgradient limit of the Underground HWDUs that extends to the Culebra Member of the Rustler Formation [20 NMAC 4.1.500 (incorporating 40 CFR §§264.95, 263.601, and 264.602)]. The Permittees shall conduct the DMP at DMWs specified in Table V.C.1, and as required by 20 NMAC 4.1.500 (incorporating 40 CFR §§264.98 and 264.601).

B. Discussion of Draft Permit Condition

Module V.B's definition of the "point of compliance" should be revised for two reasons. First the horizontal dimension fails to include the WIPP "waste management area" as required by 20 NMAC 4.1.500 § 264.95. Second, the condition impermissibly places the "point of compliance" upgradient of the detection monitoring wells WQSP-4 WQSP-5, WQSP-6, the locations of which are approved in Module V.C.1. Both the regulations and the EPA's assessment of the WIPP in its no migration determination require setting the compliance point a the site boundary to include the WIPP's natural barrier.

(1) The Point of Compliance Should be the WIPP Site Boundary.

The "point of compliance" for the WIPP facility should be the downgradient WIPP Site boundary in order to include the natural salt barrier which constitutes the entire WIPP waste management area. Section 264.95 provides:

(a) The Regional Administrator will specify in the facility permit the point of compliance at which the groundwater protection standard of § 264.92 applies and at which monitoring must be conducted. The point of compliance is a vertical surface located at the hydraulically downgradient limit of the *waste management area* that extends down into the uppermost aquifer underlying the regulated units.

(b) The waste management area is the limit projected to the horizontal plane of the area on which waste will be placed during the active life of the regulated unit.

(1) The *waste management area* includes horizontal space taken up by any liner, dike, *or other barrier* designed to contain waste in a regulated unit.

(2) If the facility contains more than one regulated unit, the waste

> management area is described by an imaginary line circumscribing the several regulated units. 20 NMAC 4.1.500, § 264.95 (emphasis added).

The Preamble for these regulations further explains that:

> the edge of the waste management area is *not the outer limit of the waste itself*. The limit includes any horizontal space taken up by liners, dikes, or the barriers designed to contain waste in a regulated unit.

47 Fed. Reg. 32,274, 32,299 (July 26, 1982) (emphasis added). Thus, the point of compliance is the downgradient edge of the "waste management area," which is not simply "the outer limit of the waste itself," but includes any "horizontal space...or other barrier designed to contain waste."

The "waste management area" at the WIPP consists of the HWDUs and the sixteen square mile surrounding land withdrawal area. The land withdrawal area provides a natural barrier for containment of the waste and is an integral part of the WIPP waste disposal system. This was confirmed in the no migration determination, where the EPA defined the actual boundary of the facility as the boundary of the Land Withdrawal Area within the Salado formation:

> *... After reviewing the specifics of the WIPP site, the Agency has tentatively concluded that the 4-mile by 4-mile WIPP land withdrawal area represents the most appropriate lateral boundary of the disposal unit. This area is clearly defined, relatively limited in size (compared to the Salado formation), and coincident with the land under the DOE's control. The Agency has carefully reviewed the geology of this specific area, and has tentatively concluded that no realistic routes of migration lie within it ... Defining the unit boundary at the edge of the WIPP site, therefore, would effectively isolate the wastes from possible routes of migration beyond the immediate limits of the WIPP site and confine it to an area whose geology the EPA has examined in detail. At the same time, this boundary will allow some relatively limited movement of hazardous constituents through the encapsulating salt, which as discussed above is consistent with the design of the WIPP.*

55 FR 13704-13706 Final Rule at 55 FR 47715 to 47716. Therefore, the outer lateral limit of the entire waste disposal unit is the boundary of the land withdrawal area.

Establishing the compliance point at the limit of the HWDUs fails to include the entire "waste management area" at the WIPP site. The HWDUs at the WIPP facility extend solely to the outer limit of the waste itself, and exclude the natural salt barrier which is designed to contain the waste. The U.S. EPA rejected defining the unit boundary at the limit of the HWDUs:

> *The Agency has rejected this approach in today's proposal because defining the unit boundary at ... the walls of the salt mine, or alternatively as the furthest extent of the disturbed rock zone surrounding the excavated area ...* [because such definition] ... *would run contrary to the intended performance of the WIPP. The WIPP is designed to confine wastes within the salt bed, not to prevent any movement of constituents into the surrounding salt formation as the formation encroaches on the waste and encapsulates it. For example, it is possible that waste would migrate limited distances laterally along horizontal marker beds within the Salado formation. Yet this migration, as long as it remained within the immediate vicinity of the original repository, would in no way threaten the "overall integrity of the disposal practice." Drawing the unit boundary right at the repository walls or at the furthest extent of the disturbed rock zone therefore would be inappropriately limiting, and would not accurately reflect the intended performance of the WIPP.*

55 FR at 13076. Thus, the outer limit of HWDU is not appropriate as the compliance point, since the HWDUs do not include the entire WIPP "waste management area." Accordingly, in order for the WIPP compliance point to be at the limit of the "waste management area," the "point of compliance" must be the downgradient WIPP site boundary to include the natural geological barrier, indeed, Figure L-9 shows the WIPP site boundary as the groundwater point of compliance. Given the close location of the detection monitoring wells to the HWDUs, any possible migration would be detected long before reaching the site boundary.

In summary, the regulations and the EPA's assessment of the WIPP geology require setting the compliance point at the site boundary to include the WIPP natural barrier material.

(2) <u>At a Minimum the Point of Compliance Should Be Consistent with the Downgradient Detection Monitoring Well Locations Approved in Condition V.C.1.</u>

Draft Permit Condition V.B., which identifies the point of compliance at the downgradient limit of the HWDUs, is inconsistent with Condition V.C.1., which locates the downgradient detection monitoring wells between the downgradient limit of the HWDUs and the WIPP Site boundary. 20 NMAC 4.1.500 §§ 264.97(g) and 264.98(b) require that the detection monitoring wells be located at the compliance point. As currently drafted, Condition V.B. appears to place the point of compliance upgradient of the detection monitoring wells. The regulations do not authorize placing the point of compliance upgradient of the monitoring wells. See 20 NMAC 4.1.500 §§ 264.95, 264.97(g), 264.98(b); see also Memorandum of Office of Solid Waste Management No. 12290 (impermissible to place monitoring wells 30 feet back from point of compliance). Accordingly, Condition V.B should be revised to establish the point of compliance at the downgradient WIPP Site boundary.

C. <u>Proposed Revision to Draft Permit Condition</u>

1. Module V.B., Page V-1

The point of compliance is the vertical surface located at the hydraulically downgradient limit of the WIPP Land Withdrawal Area that extends to the Culebra Member of the Rustler Formation [20 NMAC 4.1.500 (incorporating 40 CFR §§ 264.95, 264.601, and 264.602)]. The Permittees shall conduct the DMP at DMWs specified in Table V.C.1 and as required by 20 NMAC 4.1.500 (incorporating 40 CFR §§ 264.98 and 264.601).

COMMENT 109: DRAFT PERMIT MODULE V.D, PAGES V-2 AND V-3

A. Draft Permit Module Text

The Permittees shall conduct the DMP at the DMWs as specified in Table V.C.1 for the parameters and constituents listed in Table V.D below and as required by 20 NMAC 4.1.500 (incorporating 40 CFR §264.98(a)):

B. Discussion of Draft Permit Condition

Table V.D should be revised to delete the following compounds for the reasons indicated:

1. Chloroform, zinc, iron, 1,2-dichloroethane

The NMED added four compounds the target analyte table list in V.D in that are not relevant to WIPP, are not hazardous constituents associated with TRU mixed waste, and not included in the Table D18-3 of the Application. Furthermore these, four compounds; chloroform, zinc, iron, and 1,2-dichloroethane are not listed in Table L-3, which has been approved by the NMED. Therefore, these compounds should be deleted.

2. Radium

Radium has been deleted from radiological data suites measured and reported for groundwater at the WIPP. The DOE has requested that the New Mexico Ground Water Protection and Remediation Bureau delete Ra-226 and Ra-228 from the WIPP water discharge (DP-831) permit. Radium is not a constituent in the WIPP waste streams. Therefore, the radium requirements in Module V, Table V.D should be deleted.

3. Methanol, formaldehyde, and hydrazine

Methanol purges very poorly and is not well analyzed by EPA Method 8260. Additionally, methanol is generally used as a solvent for extraction of soil volatiles and for dilution of working standards and therefore it is not normally listed as a target analyte. Formaldehyde also purges poorly and is an unsuitable candidate for EPA 8260. There is no EPA method known for the analysis for hydrazine in groundwater, which would necessitate the development of a groundwater method. Furthermore, these constituents will not appear in groundwater samples without WIPP detecting the presence of previously identified and monitored constituents. The Permittees proposed monitoring the constituents listed in Appendix IX in its Permit Application in early 1997. The NMED responded with comments and the Permittees revised the Permit Application according to the NMED comments. It is reasonable to assume that methanol, hydrazine or formaldehyde would travel no faster in groundwater than the Appendix IX volatile

organics for which baseline has already been established. Therefore, it is unreasonable to assume that these constituents would present themselves in groundwater samples without the presence of previously identified and monitored constituents. Therefore, hydrazine, methanol, and formaldehyde should be dropped from the target analyte list contained in Table V.D.

C. Proposed Revision to Draft Permit Condition

1. Module V.D., Table V.D, Page V-2 and V-3

Table V.D - Parameter or Constituent	
pH	*Specific conductance*
*Total organic carbon (**TOC**)*	*Total organic halogen (**TOH**)*
*Total dissolved solids (**TDS**)*	*Total suspended solids (**TSS**)*
Density	*Calcium*
Magnesium	*Potassium*
Chloride	*Chlorobenzene*
Carbon tetrachloride	*1,1-dichloroethane*
1,1-dichloroethylene	*1,1,2,2-tetrachloroethane*
Methylene chloride	*1,1,1-trichloroethane*
Toluene	*1,4-dichlorobenzene*
Cresols	*cis-1,2-dichloroethylene*
1,2-dichlorobenzene	*2,4-dinitrotoluene*
2,4-dinitrophenol	*Hexachlorobenzene*
Hexachloroethane	*Methyl ethyl ketone*
Isobutanol	*Pentachlorophenol*
Pyridine	*Tetrachloroethylene*
1,1,2-Trichloroethane	*Trichloroethylene*
Trichlorofluoromethane	*Xylenes*
Nitrobenzene	*Vinyl chloride*
Arsenic	*Barium*
Cadmium	*Chromium*
Lead	*Mercury*
Selenium	*Silver*
Antimony	*Beryllium*
Nickel	*Thallium*
Gross alpha	*Gross beta*

2. Attachment L, Table L-3, Page L-50

Background Ground-Water Quality	*Operational Detection Monitoring Ground-water Quality*
Indicator Parameters *pH, SC, TOC, TOX, TDS, TSS, density* *Parameters Listed in 20 NMAC 4.1.500 (incorporating 40 CFR § 264) Appendix IX, Calcium, Magnesium, Potassium* *Field Analyses* *pH, SC, temperature, chloride, Eh, alkalinity, total Fe, specific gravity*	*Indicator Parameters* *pH, SC, TOC, TOX, TDS, TSS, density* *Organic Parameters* *Carbon tetrachloride* *Chlorobenzene* *1,1-dichloroethylene* *1,1-dichloroethane* *Methylene chloride* *1,1,2,2-tetrachloroethane* *Toluene* *1,1,1-trichloroethane* *Cresols* *1,4 dichlorobenzene* *1,2 dichlorobenzene* *cis-1,2-dichloroethylene* *2,4 dinitrophenol* *2,4-dinitrotoluene* *Hexachlorobenzene* *Hexachloroethane* *Isobutanol* *Methyl ethyl ketone* *Pentachlorophenol* *Pyridine* *Tetrachloroethylene* *1,1,2 Trichloroethane* *Trichloroethylene* *Trichlorofluoromethane* *Xylenes* *Nitrobenzene* *Vinyl Chloride* *Metals* *TCLP metals:* *Arsenic* *Barium* *Cadmium* *Chromium* *Lead* *Mercury* *Selenium* *Silver* *Antimony* *Calcium* *Beryllium* *Magnesium* *Nickel* *Potassium* *Thallium* *Gross Alpha* *Gross Beta* *Field Analyses* *pH, SC, temperature, chloride, Eh, alkalinity, total Fe, specific gravity*

Note: Because of the lack of sophisticated weights and measures equipment available for field density assessment, field density evaluations are expressed in terms of specific gravity, which is a unitless measure.

COMMENT 110: DRAFT PERMIT MODULE V.F.2, PAGE V-4

A. Draft Permit Module Text

The Permittees shall collect a minimum of four samples from each DMW specified in Table V.C.1 each time the DMP is sampled to determine background ground-water quality for each parameter and constituent listed in Table V.D, and for all substances listed in 20 NMAC 4.1.500 (incorporating 40 CFR §264 Appendix IX) as specified in Permit Attachment L, Section L-4a.

B. Discussion of Draft Permit Condition

This condition should be revised to reflect that the Permittees have completed the determination of background water quality consistent with the requirements of 20 NMAC 4.1.500 § 264.97(g) as stated in Attachment L, Section L-4a. As currently drafted, condition V.F.2 requires a minimum of four samples from each well semiannually for each parameter listed in Table V.D. and 20 NMAC 4.1.500 § Part 264, Appendix IX data as specified in Attachment L, Section L-4a. This requirement goes beyond what is required in the regulations and what is stated in Attachment L. Specifically, 20 NMAC 4.1.500 § 264.97(g) states:

> In detection monitoring or where appropriate in compliance monitoring, data on each hazardous constituent specified in the permit will be collected from background wells and wells at the compliance point(s). The number and kinds of samples collected to establish background shall be appropriate for the form of statistical test employed, following generally accepted statistical principles. The sample size shall be as large as necessary to ensure with reasonable confidence that a contaminant release to ground water from a facility will be detected. The owner or operator will determine an appropriate sampling procedure and interval for each hazardous constituent listed in the facility permit which shall be specified in the unit permit upon approval by the Regional Administrator. <u>This sampling procedure shall be: (1) A sequence of at least four samples, taken at an interval that assures, to the greatest extent technically feasible, that an independent sample is obtained</u>, by reference to the uppermost aquifer's effective porosity, hydraulic conductivity, and hydraulic gradient, and the fate and transport characteristics of the potential contaminants, or (2) an alternate sampling procedure proposed by the owner or operator and approved by the Regional Administrator. (Emphasis added)

In compliance with 20 NMAC 4.1.500 § 264.97(g), the Permit Application proposed and the Groundwater Monitoring Plan in Attachment L confirmed, that background water quality would be determined based on four sampling events over a two year period. As stated in Attachment L:

> The seven RCRA monitoring wells have been sampled on a semiannual basis since their installation in 1995 to establish background ground-water quality in accordance with 20 NMAC 4.1.500 (incorporating 40 CFR §§ 264.97 and 264.98). This has included at least two full rounds of 20 NMAC 4.1.500 (Incorporating 40 CFR § 264) Appendix IX analysis for samples from each of the proposed RCRA detection monitoring wells. In addition, ground-water samples were collected from the DMP wells (from March 1997 until waste emplacement) at a frequency of four sample replicates collected semiannually from each well for the indicator parameters of pH, specific conductance (SC), total organic carbon (TOC), and total organic halogen (TOX) to further establish background ground-water quality until detection monitoring in accordance with 20 NMAC 4.1.500 (incorporating 40 CFR § 264.98) becomes applicable. A total of four rounds of Appendix IX analysis will be conducted for samples from each well for use in background ground-water quality determinations. (Section L-4a)

Background sampling has been completed using the plan presented in the Permit Application which is consistent with Attachment L, Section L-4a with regard to frequency. Draft Permit condition V.F.2 alters the frequency by appearing to require four replicate samples for all Appendix IX and Table V.D parameter and constituent analyses. This exceeds what is required by 20 NMAC 4.1.500, § 264.97(g). Moreover, four replicate samples of all parameters listed in Table V.D and 40 CFR 264 Appendix IX would be costly and would not improve the baseline, which consists mainly of non-detects. As proposed and described in Attachment L, the Permittees have taken four replicate samples for indicator parameters of pH, SC, TOC, and TOX. Consistent with regulatory requirements, the Permittees have performed a total of four rounds of semiannual samples for the Appendix IX constituents to determine background water quality. Therefore, Condition V.F.2 must be revised consistent with the requirements of 20 NMAC 4.1.500, § 264.97(g).

C. <u>Proposed Revision to Draft Permit Condition</u>

1. Module V.F.2, Page V-4

The Permittees shall collect a minimum of four samples from each DMW specified in Table V.C.1 to determine background ground-water quality for each parameter and constituent listed in Table V.D, and for all substances listed in 20 NMAC 4.1.500 (incorporating 40 CFR § 264 Appendix IX) as specified in Permit Attachment L, Section L-4a.

2. Attachment L, Page L-30, Lines 32 to 36 and Page L-31, Lines 1 to 15

Prior to waste receipt, measurements will have been made of each background ground-water quality parameter and constituent specified in Table L-3 at every DMP ground-water monitoring well during each of the four background sampling events. If any background ground-water quality parameter or constituent has not been measured prior to waste receipt, measurements will be made for those parameters or constituents in hydraulically upgradient DMP ground-water monitoring wells for a sequence of four sampling events.

*Following completion of the four sampling events, the arithmetic mean and variance shall then be calculated by the field supervisor or designee for each well. These measurements will then serve as a background value against which statistical values for subsequent sampling events during detection monitoring will be compared. Statistical analysis and comparison will be accomplished using one of the five statistical tests specified in 20 NMAC 4.1.500 (incorporating 40 CFR § 264.97(h)), which may include Cochran's Approximation to the Behrens-Fisher students' t-test at the 0.01 level of significance (described in Appendix IV to 20 NMAC 4.1.500 (incorporating 40 CFR § 264). If the comparisons show a significant increase at any monitoring site (as defined in 20 NMAC 4.1.500 (incorporating 40 CFR § 264.98(f)), the well shall be resampled and an analysis performed as soon as possible, in accordance with 20 NMAC 4.1.500 (incorporating 40 CFR § 264.98(g)(2)). The results of the statistical comparison will be reported annually in the Annual Site Environmental Report (**ASER**), and will be reported to the NMED as required under 20 NMAC 4.1.500 (incorporating 40 CFR § 264.98(g)).*

COMMENT 111: DRAFT PERMIT MODULE V.J.2.a, PAGE V-7

A. Draft Permit Module Text

Data evaluation results - the Permittees shall submit to the Secretary the analytical results required by Permit Conditions V.E.1 and V.I.2, and the results of the statistical analyses required by Permit Condition V.I.3, in compliance with the schedule on Table V.J.2.a below, and as required by 20 NMAC 4.1.500 (incorporating 40 CFR §264.97(j)):

B. Discussion of Draft Permit Condition

The data evaluation results can be reported in the Annual Site Evaluation Report, which is submitted to the NMED. Preparation of reports in addition to the annual site environmental report is redundant. The proposed "data evaluation results reporting schedule" allows only 45 days after the collection of the final suite of samples to submit the semi annual data report. Generally, the analytical results from the laboratory are not received by the DMP staff for at least 30 days after the samples are sent to the laboratory, thus allowing only 15 days or less to perform QA/QC, review the results, and prepare and submit the report to the NMED. This is not an adequate amount of time to complete these reports.

C. Proposed Revision to Draft Permit Condition

1. Module V.J.2.a, Page V-7

Data evaluation results - the Permittees shall submit to the Secretary the analytical results required by Permit Conditions V.E.1 and V.I.2, and the results of the statistical analyses required by Permit Condition V.I.3, in the Annual Site Environmental Report by October 1 of each calendar year, and as required by 20 NMAC 4.1.500 (incorporating 40 CFR § 264.97(j)).

Delete Table V.J.2.a

COMMENT 112: DRAFT PERMIT MODULE V.J.2.c, PAGE V-7

A. Draft Permit Module Text

Ground-water flow results - the Permittees shall submit to the Secretary an annual report, beginning twelve (12) months after issuance of this Permit, evaluating the ground-water flow data specified in Permit Condition V.H.

B. Discussion of Draft Permit Condition

The annual groundwater flow rate and direction data can be reported in the Annual Site Environmental Report, which is submitted to the NMED. Preparation of a separate annual report in addition to the site environmental report is redundant.

C. Proposed Revision to Draft Permit Condition

1. Module V.J.2.c, Page V-7

Ground-water flow results - the Permittees shall submit to the Secretary an evaluation of groundwater flow data specified in Permit Condition V.H. in the Annual Site Environmental Seport by October 1 of each calendar year.

COMMENT 113: DRAFT PERMIT MODULE V.J.3.b, PAGE V-7 AND V-8

A. Draft Permit Module Text

If the Permittees determine, pursuant to Permit Condition V.I and 20 NMAC 4.1.500 (incorporating 40 CFR §264.98(g)), that there is statistically significant evidence of contamination for any parameter or constituent specified in Table V.D, the Permittees shall comply with the following:

Appendix IX sampling - the Permittees shall immediately, but no later than one (1) month, sample the ground water in all DMWs specified in Table V.C.1 and determine the concentration of all substances identified in 20 NMAC 4.1.500 (incorporating 40 CFR §264 Appendix IX), as required by 20 NMAC 4.1.500 (incorporating 40 CFR §264.98(g)(2)).

B. Discussion of Draft Permit Condition

Condition V.J.3.b. requires sampling of all DMWs within one month of a determination that statistically significant contamination has occurred. It is not technically feasible to sample all of the WIPP DMWs within a one month time frame following sampling protocols prescribed in the Draft Permit because of the unique character of the geological structure of the Culebra and the spatial variability of groundwater chemistry from well to well.

C. Proposed Revision to Draft Permit Condition

1. Module V.J.3.b, Page V-7 and V-8

Appendix IX sampling - the Permittees shall immediately, but no later than one (1) month, sample the ground water in all DMWs specified in Table V.C.1 for which there was statistically significant evidence of contamination and determine the concentration of all substances identified in 20 NMAC 4.1.500 (incorporating 40 CFR § 264 Appendix IX), as required by 20 NMAC 4.1.500 (incorporating 40 CFR § 264.98(g)(2)).

2.5.2 Comments on Attachment L

COMMENT 114: DRAFT PERMIT ATTACHMENT L--GENERAL COMMENT--PROCEDURES

A. Discussion

There is no reason to include operating procedures in the permit. The Permittees are required to meet the conditions of the permit to protect human health and the environment in a manner that is determined to be the "best program" by the Permittees. The Permittees' best management practices are reflected in the procedures that are in place to perform the permitted activities at the facility. These practices may change as opportunities to work safer, more efficiently, and more cost effectively present themselves. The Permittees need to maintain the flexibility to adjust their operating procedures as needed without having to request a permit modification each time. In other words, the NMED should issue a permit that tells the Permittees "what" needs to be done to protect human health and the environment. The "how" should be left up to the Permittees so that the program can be implemented in the most efficient manner.

B. Proposed Revision to Draft Permit Condition

1. Attachment L, Page L-15, Lines 37 to 38 and Page L-15, Lines 1 to 4

The WIPP ground-water level monitoring program (WLMP) is a subprogram of the DMP. The quality assurance activities of the WLMP are in accordance with the WID Quality Assurance Program Description (QAPD), WP 13-1, and the quality assurance implementing procedure specific to ground-water surface elevation monitoring is WIPP Procedure WP 02-EM1014 "Groundwater Level Measurement."

2. Attachment L, Page L-18, Lines 2 to 8

To obtain an accurate ground-water surface elevation measurement, a calibrated water-level measuring device will be lowered into a test well and the depth to water recorded from a known reference point. When using an electrical conductance probe, the depth to water will be determined by reading the appropriate measurement markings on the embossed measuring tape when the alarm is activated at the surface. WIPP Procedure WP 02-119, "Manual Groundwater Level Measurements," specifies the methods to be used in obtaining groundwater-level measurements.

3. Attachment L, Page L-18, Lines 18 to 24

Data recorded on the field data sheets and submitted by field personnel will be subject to guidelines outlined in WIPP Procedure WP 02-EM3001 "Administrative Processes for Environmental Monitoring Programs." This procedure specifies the processes for administering and managing such data. The data will be entered onto a computerized work sheet. The work sheet will calculate ground-water surface elevation in both feet and meters relative to the top of the casing and also relative to mean sea level. The work sheet will also adjust ground-water surface elevations to equivalent freshwater heads.

4. Attachment L-4c(2((i), Page L-19, Lines 25 to 33

The electronic flow controller allows personnel collecting samples to control the rate of discharge during well purging to minimize the potential for loss of volatiles from the sample. As recommended in the "RCRA Ground-Water Monitoring Technical Enforcement Guidance Document" (EPA, 1986) the wells will be purged a minimum of three well bore volumes at a rate that will minimize the agitation of recharge water. This will be accomplished by monitoring formation pressure and matching the rate of discharge from the well as nearly as possible to the rate of recharge to the well. WIPP Procedure WP 02-EM1002, "Electric Submersible Pump Monitoring System Installation and Operation," specifies the methods used for controlling flow rates and monitoring formation pressure. Well purging requirements will be used in conjunction with serial sampling to determine when the ground-water chemistry stabilizes and is therefore representative of undisturbed ground water.

5. Attachment L, Page L-20, Lines 20 to 27

The DMP wells do not require the installation of a packer because sample biases due to well construction deficiencies are not present. However, pressures will be monitored using down hole automatic air line bubblers in the formation to maintain the water level above the pump intake. Pressure transducers may be used in line with bubblers to provide continual electronic monitoring through data acquisition systems. WIPP Procedure WP 02-EM1002, "Electric Submersible Pump Monitoring System Installation and Operation," provides instructions for monitoring formation pressure using automatic airline bubblers in conjunction with pressure transducers and data acquisition systems.

6. Attachment L, Page L-21, Lines 25 to 27 and Page L-22, Lines 1 and 2

Protocols for collection of serial samples are specified in WIPP Procedure WP 02-EM1006, "Final Sample and Serial Sample Collection." Analysis of serial samples are specified in WIPP Procedures WP 02-EM1005, "Groundwater Serial Sample Analysis" and WP 02-EM1015, "Water Quality Monitoring Using the YSI Model 3560 Monitoring System".

7. Attachment L, Page L-22, Lines 27 to 33

Upon completion of the collection of the last serial sample suite, the serial sample bottles accrued throughout the duration of the pumping of the well will be discarded. No serial sample bottles will be reused for sampling purposes. However, serial samples may be stored for a period of time depending upon the need. WIPP Procedure WP 02-EM1006, "Final Sample and Serial Sample Collection," defines the protocols for the collection of final and serial samples. WIPP Procedure WP 02-EM1005, "Groundwater Serial Sample Analysis," defines the protocols for serial sample analysis.

8. Attachment L, Page L-23, Lines 33 to 37

Water samples will be collected at atmospheric pressure using either the filtered or unfiltered nylon sampling lines branching from the main sample line. Detailed protocols, in the form of procedures, assure that final samples will be collected in a consistent and repeatable fashion. WIPP Procedure WP 02-EM1006 defines the requirements for collection of final samples for analyses.

9. Attachment L, Page L-24, Lines 30 to 31

Resulting wastes are disposed of in accordance with the WID "Site Generated, Non-Radioactive Hazardous Waste Management Plan," WP 02-RC.01.

10. Attachment L, Page L-25, Lines 14 to 19

The sample tracking system at the WIPP will use uniquely numbered chain of custody (CofC) Forms and request for analysis (RFA) Forms. The primary consideration for storage or transportation is that samples shall be analyzed within the prescribed holding times for the parameters of interest. WIPP Procedure WP 02-EM3001, "Administrative Processes for Environmental Monitoring Programs," provides instructions to ensure proper sample tracking protocol.

11. Attachment L, Page L-25, Lines 26 to 31

To ensure the integrity of samples from the time of collection through reporting date, sample collection, handling, and custody shall be documented. Sample custody and documentation procedures for EM sampling and analysis activities are detailed in WIPP Procedure WP 02-EM3001, "Administrative Processes for Environmental Monitoring Programs". These procedures will be followed throughout the course of each sample collection and analysis event.

12. Attachment L, Page L-28, Lines 16 to 21

The equipment used in taking ground-water surface elevation measurements will be maintained in accordance with WIPP Procedure WP 10-AD3029 , "Calibration and Control of Monitoring and Data Collection Equipment". The EM Section will be responsible for calibrating the needed equipment on schedule in accordance with written procedures. The EM Section will also be responsible for maintaining current calibration records for each piece of equipment.

13. Attachment L, Page L-35, Lines 4 to 6

Specific Quality Assurance (QA) requirements for the WIPP are defined in the WID Quality Assurance Program Description (QAPD), WP 13-1. Requirements specific to the DMP are presented in this section.

14. Attachment L, Page L-36, Lines 2 to 12

Field measurements will include pH, SC, temperature, Eh, and static ground-water surface elevation. Field measurement accuracy will be determined using calibration check standards. Thermometers used for field measurements will be calibrated to the National Institute for Standards and Technology (NIST) traceable standard on an annual basis to assure accuracy. Accuracy of ground-water surface elevation measurements will be checked before each measurement period by verifying calibration of the device within the specified schedule. The QAPD, Section 2.4.4, Monitoring, Measuring, Test and Data Collection Equipment, outlines the basic requirements for field equipment use and calibration. WIPP Procedure WP 10-AD3029, "Calibration and Control of Monitoring and Data Collection Equipment," contains instructions that outline protocols for maintaining current calibration of ground-water surface elevation measurement instrumentation.

15. Attachment L, Page L-38, Lines to 31 and Page L-39, Lines 1 to 5

Provisions and responsibilities for the preparation and use of instructions and procedures at the WIPP are outlined in Section 1.4, Documents, Section 2.1.2, Implementing Procedures, and Section 4, Sample Control, and Quality Assurance Requirements, of the QAPD. Activities performed for ground-water monitoring that may affect ground water will be performed in accordance with documented and approved procedures which comply with the Permit and the requirements of 20 NMAC 4.1.500 (incorporating 40 CFR § 264 Subpart F).

Technical procedures, as specified elsewhere in this DMP, have been developed for each quality-affecting function performed for ground-water monitoring. The technical procedures unique to the DMP will be controlled by the ES&H at WIPP. The procedures are sufficiently detailed and include, when applicable, quantitative or qualitative acceptance criteria.

Procedures were prepared in accordance with requirements in Section 1.4, Documents, Section 2.1.2, Implementing Procedures, and Section 4, Sample Control, and Quality Assurance Requirements, of the QAPD.

16. Attachment L, Page L-39, Lines 11 to 13

Process control requirements, defined in the QAPD Section 2.1, Work Processes and Section 4, Sample Control and Quality Assurance Requirements, are met, and will continue to be met, for this DMP.

17. Attachment L, Page L-39, Lines 15 to 21

Inspection and surveillance activities will be conducted as outlined in Section 2.4, Inspection and Testing, and Section 3.2, Independent Assessment of the QAPD. The Permittees will perform the applicable inspections and surveillance on the scope of work. The Permittees will perform checks as defined in applicable procedures. Performance checks for the DMP will determine the acceptability of purchased items and assess degradation that occurs during use.

18. Attachment L, Page L-39, Lines 23 to 32

QAPD Section 2.4.4, Monitoring, Measuring, Testing, and Data Collection, outline the basic requirements for control and calibrating monitoring and data collection (M&DC). M&DC equipment shall be properly controlled, calibrated, and maintained according to WIPP Procedure WP 10-AD3029, "Calibration and Control of Monitoring and Data Collection Equipment." Results of calibrations, maintenance, and repair will be documented. Calibration records will identify the reference standard and the relationship to national standards or nationally accepted measurement systems. Records will be maintained to track uses of M&DC equipment. If M&DC equipment is found to be out of tolerance, the equipment will be tagged and it will not be used until corrections are made.

19. Attachment L, Page L-39, Lines 34 to 35 and Page L-40, Lines 1 to 6

Section 1.3, Quality Improvement, Section 4.4, Disposition of Nonconforming Samples, of the QAPD, specifies the system used at the WIPP for ensuring that appropriate measures are established to control nonconforming conditions. Nonconforming conditions connected to the DMP will be identified in and controlled by documented procedures. Equipment that does not conform to specified requirements will be controlled to prevent use. The disposition of defective items will be documented on records traceable to the affected items. Prior to final disposition, faulty items will be tagged and segregated. Repaired equipment will be subject to the original acceptance inspections and tests prior to use.

20. Attachment L, Page L-40, Lines 8 to 14

Requirements for the development and implementation of a system to determine, document, and initiate appropriate corrective actions after encountering conditions adverse to quality at the WIPP are outlined in Section 1. 3, Quality Improvement, of the QAPD. Conditions adverse to acceptable quality will be documented and reported in accordance with corrective action procedures and corrected as soon as practical. Immediate action will be taken to control work performed under conditions adverse to acceptable quality to prevent quality degradation.

21. Attachment L, Page L-40, Lines 16 to 24

Section 1.5, Records, of the QAPD, outlines the policy that will be used at the WIPP regarding identification, preparation, collection, storage, maintenance, disposition, and permanent storage of QA records.

Records to be generated in the DMP will be specified by procedure. QA and RCRA operating records will be identified. This will be the basis for the labeling of records as "QA" or "RCRA operating" on the EM RIDS.

QA records will document the results of the DMP implementing procedures and will be sufficient to demonstrate that all quality-related aspects are valid. The records will be identifiable, legible, and retrievable.

COMMENT 115: DRAFT PERMIT ATTACHMENT L, PAGE L-17, LINES 6 TO 14

A. Draft Permit Attachment Text

Ground-water surface elevation monitoring will continue through the post-closure care period specified in Permit Module VI. The Permittees may temporarily increase the frequency of monitoring to effectively document naturally occurring or artificial perturbations that may be imposed on the hydrologic systems at any point in time. This will be conducted in selected key wells by increasing the frequency of the manual ground-water surface elevation measurements or by monitoring water pressures with the aid of electronic pressure transducers and remote data-logging systems. The Permittees will promptly notify NMED in writing of any increased frequency of ground-water surface elevation measurements, and include such additional data in the reports specified in Section L-5.

B. Discussion of Draft Permit Condition

The requirement in Attachment L to promptly notify the NMED of any increased frequency of groundwater surface elevation is not legally required and places an unnecessary reporting burden on the WIPP with regard to water level monitoring. Section 264.98(e) only requires the reporting of groundwater flow rate and direction. Section 264.97 (f) only requires that groundwater surface elevation be determined each time groundwater is sampled as part of the DMP, i.e., semiannually. No regulatory basis exists to require more frequent water level monitoring or to notify the NMED of frequency changes. The frequency will have no impact on information provided to the NMED in accordance with the WIPP's regulatory obligations, and it should be within the Permittees' discretion to determine, an increase in frequency to assure meaningful data. Furthermore, because the WIPP is also a research facility, measurements in water levels may be made for purely academic reasons.

C. Proposed Revision to Draft Permit Condition

1. Attachment L-4c(1), Page L-17, Lines 6 to 14

Ground-water surface elevation monitoring will continue through the post-closure care period specified in Permit Module VI. The Permittees may temporarily increase the frequency of monitoring on the hydrologic systems at any point in time. This will be conducted in selected key wells by increasing the frequency of the manual ground-water surface elevation measurements or by monitoring water pressures with the aid of electronic pressure transducers and remote data-logging systems.

COMMENT 116: DRAFT PERMIT ATTACHMENT L, PAGE L-23, LINES 1 TO 9

A. Draft Permit Attachment Text

During the first two years of DMP well serial sampling, the first sample will be analyzed as soon as possible after the pump is turned on and daily thereafter for a period of four days or until the field indicator parameters (chloride, divalent cations, alkalinity, and iron) stabilize. Eh, pH, and SC will be continually monitored by using a flow cell with ion-specific electrodes and a real-time readout. When detection monitoring begins, the serial sampling process may be modified and the decision to collect final samples would then be based on the number of well bore volumes purged and results of the analysis of chloride, temperature, specific gravity, pH, Eh, and SC. Removal of serial sampling from the DMP will be accomplished through a permit modification and a modification to this plan.

B. Discussion of Draft Permit Condition

Serial sampling is not required by the regulations, and the Draft Permit should instead allow the Permittees to modify the existing serial sampling process. 20 NMAC 4.1.500 § 264.97(d) only requires the DMP to include consistent sampling procedures that ensure monitoring results that provide "a reliable indication of groundwater quality." The WIPP has been performing serial sampling at the DMP wells for over two years. The experience gained from such sampling has produced a thorough understanding of how the individual wells react to pumping, and process knowledge has been established. A modification of serial sampling in the collection of final samples will satisfy the regulatory obligation to provide monitoring results which are a reliable indication of groundwater quality. No additional reliability is achieved by performing serial sampling as described in the Draft Permit on Page L-23, Paragraph one.

C. Proposed Revision to Draft Permit Condition

Revise the condition as follows:

1. Attachment L-4c(2)(ii), Page L-23, Lines 1 to 9

When detection monitoring begins, the serial sampling process may be modified and the decision to collect final samples would then be based on the number of well bore volumes purged and results of the analysis of chloride, temperature, specific gravity, pH, Eh, and SC.

COMMENT 117: DRAFT PERMIT ATTACHMENT L, PAGE L-24, LINES 24 TO 29

A. Draft Permit Attachment Text

Duplicates of the final sample will be provided to WIPP oversight agencies as requested by the Permittees or NMED. A duplicate of the sample will also be preserved with nitric acid and placed in storage within the ES&H Environmental Sample storage area and held until final reports from the contract analytical laboratory have been evaluated and approved. When the final laboratory report has been approved, the samples will be removed from storage and destroyed.

B. Discussion of Draft Permit Condition

Duplicate samples preserved with nitric acid and placed in storage within the ES&H Environmental Sample Storage area applies only to radionuclides and are not part of the DMP.

C. Proposed Revision to Draft Permit Condition

1. Attachment L-4c(2)(iii), Page L-24, Lines 24 to 29

Delete this paragraph.

COMMENT 118: DRAFT PERMIT ATTACHMENT L, PAGE L-30, LINES 14 TO 18

A. Draft Permit Attachment Text

Whenever possible, sample values which are reported below detection limits will be incorporated into the database as sample values measured at the detection limit for statistical analysis. When values are not available, alternative methods of analysis, as specified in previous sections, will be used. In particular, the use of nonparametric statistics will be required.

B. Discussion of Draft Permit Condition

It is not always appropriate to include the detection limit into the database as sample values measured at the detection limit for statistical analysis. In the Permit Application, values below detection limits are not reported in analytical results for background sampling, and detection limits vary between sampling rounds. In establishing background concentration ranges and distribution types, the Permittees used one-half of the reported detection limit as the sample value for samples that were reported as non-detect, unless the detection limit was unreasonably high. If the detection limit was unreasonably high and the value was reported as non-detect, the detection limits and associated samples were not included in the data set so as to not skew the parameter distribution and UCL_{95} or 95th percentile for non parametric data sets. Section 8.1 of the EPA statistical methods guidance suggests that using one-half the detection limit for small to moderate amounts of non-detect data is an appropriate procedure.

C. Proposed Revision to Draft Permit Condition

1. Attachment L-4e(3), Page L-30, Lines 14 to 18

Whenever possible, sample values which are reported below detection limits will be incorporated into the database as sample values measured at one-half the detection limit for statistical analysis. When values are not available, alternative methods of analysis, as specified in previous sections, will be used. In particular, the use of nonparametric statistics will be required.

COMMENT 119: DRAFT PERMIT ATTACHMENT L, PAGE L-30, LINES 23 TO 26

A. Draft Permit Attachment Text

Formal testing for outliers will only be done if an observation is orders of magnitude higher when compared to the rest of the data set (EPA, 1992). The methodologies specified in Section 8.2 of the "Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities" (EPA, 1989) will be used to check for outliers.

B. Discussion of Draft Permit Condition

This condition states that analytical results for any parameter must be "orders of magnitude" higher than its nearest neighbor to be considered as an outlier or to be tested as an outlier. This is not consistent with EPA guidance on the statistical analysis of groundwater monitoring data at RCRA facilities. Section 8.2 of this EPA guidance states that if a value is one order of magnitude greater than its neighbor, it should be suspect of being an outlier.

C. Proposed Revision to Draft Permit Condition

1. Attachment L, Page L-30, Lines 23 to 26

Formal testing for outliers will only be performed if an observation is one order of magnitude or more higher when compared to the test of the data set (EPA, 1992). The methodologies specified in Section 8.2 of the "Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities" (EPA, 1989) will be used to check for outliers.

2.6 Module VI and Attachments

2.6.1 Comments on Module VI

Comments on this Module are included with comments on other modules as appropriate.

2.6.2 Comments on Attachments E, J, J1, L, M1, and N

Comments on these Attachments are included with comments in other modules as appropriate. There are no other specific comments on these attachments, however, there are editorial comments, and comments that modify, clarify, or supplement the text in the DOE's Permit Application which are contained in the Redline/Strikeout version of the Draft Permit.

2.7 Module VII and Attachments

2.7.1 Comments on Module VII

COMMENT 120: DRAFT PERMIT MODULE VII--GENERAL COMMENT--COMMUNITY RELATIONS PLAN

A. Discussion

Because of the widespread interest and impact associated with the WIPP, it is more appropriate to refer to a “Stakeholder Information” Plan than a "Community Relations Plan”.

B. Proposed Revision to Draft Permit Condition

Change "Community Relations Plan" to "Stakeholder Information Plan" in the following conditions:

1. Module VII. D. 1., Page VII-8

The Permittees shall establish information repositories in the cities of Carlsbad, Albuquerque, and Santa Fe, New Mexico. The Permittees shall establish the repositories no later than thirty (30) calendar days after the effective date of this Permit. The purpose of these information repositories is to provide the public an opportunity to review and comment on the corrective action activities specified in this Module. These repositories shall be established at a local public library and/or similar facility which is easily accessible to the public. This Permit Condition shall be incorporated into the requirements specified in Permit Condition VII.U.3.i (Stakeholder Information Plan).

2. Module VII.M.1.e, Page VII-17

Stakeholder Information Plan

3. Module VII.U.2.i., Page VII-23

Stakeholder Information Plan

4. Module VII.U.3.i., Page VII-35

Stakeholder Information Plan

The Permittees shall prepare a plan for dissemination of information to the public regarding investigation activities and results. The Stakeholder Information Plan shall include:

COMMENT 121: DRAFT PERMIT MODULE VII--GENERAL COMMENT--DISPUTE RESOLUTION

A. Discussion

This dispute resolution provision and all references to the dispute resolution process should be deleted from the Draft Permit. Such dispute resolution processes are intended for disputes concerning technical aspects of the corrective action program. If these corrective action issues cannot be resolved through comments on the Draft Permit, or during public hearings, there is little likelihood that the proposed conflict resolution process would be beneficial. Moreover, the process in the Draft Permit varies from the alternative dispute resolution process that the EPA offered for public comment, but did not prescribe in the proposed Subpart S regulations. Specifically, the Alternative Dispute Resolution (ADR) process contemplated in the proposed regulations utilized a neutral, third party mediator as opposed to the Draft Permit's use of the NMED's Secretary as the decision-maker.

B. Proposed Revision to Draft Permit Condition

Delete the dispute resolution process.

COMMENT 122: DRAFT PERMIT MODULE VII.B.4.d, PAGE VII-6

A. Draft Permit Module Text

***Except as exempted by Section 9(a)(1) in the WIPP LWA, the Permittees shall perform a waste analysis at least annually or when a process changes, to determine whether the waste meets applicable treatment standards. Results shall be maintained in the operating record*.**

B. Discussion of Draft Permit Condition

This condition is unnecessary since all of the waste that will be sent to the WIPP for disposal and all derived waste that will be disposed of at the WIPP are exempted by the WIPP Land Withdrawal Act Amendment from the Land Disposal Restrictions. The operating record will include a notice that the wastes stored and disposed of at the WIPP are exempt from the Land Disposal Restrictions as the result of the WIPP Land Withdrawal Act Amendment. Accordingly, this condition should be deleted.

C. Proposed Revision to Draft Permit Condition

1. Module VII.B.4.d, Page VII-6

Delete this condition.

COMMENT 123: DRAFT PERMIT MODULE VII.E.1, PAGE VII-9

A. Draft Permit Module Text

Sections 74-4-4.A.5.h and 74-4-4.2 of the HWA and 20 NMAC 4.1.500 (incorporating 40 CFR §264.101) require that Permits issued after April 8, 1987, shall require corrective action for all releases of hazardous waste or constituents from any SWMU at a treatment, storage, or disposal facility, regardless of the time at which the waste was placed in the SWMU.

B. Discussion of Draft Permit Condition

This Draft Permit condition omits the regulations' key qualifier "as necessary to protect human health and the environment" to from the imposition of corrective actions at the WIPP. Specifically, 20 NMAC 4.1.500 § 264.101(a) states: " The owner or operator of a facility seeking a permit for the treatment, storage or disposal of hazardous waste must institute corrective action **as necessary to protect human health and the environment** for all releases of hazardous waste or constituents from any solid waste management unit at the facility, regardless of the time at which waste was placed in such unit."(emphasis added.) The omission of the key qualifier has led the NMED to request corrective actions that are unnecessary and not required by the regulations because the SWMUs do not pose a threat to human health or the environment. Accordingly, this provision should be revised to incorporate this key qualifier.

C. Proposed Revision to Draft Permit Condition

1. Module VII.E.1., Page VII-9

Sections 74-4-4.A.5.h and 74-4-4.2 of the HWA and 20 NMAC 4.1.500 (incorporating 40 CFR § 264.101) require that Permits issued after April 8, 1987, shall require corrective action as necessary to protect human health and the environment for all releases of hazardous waste or constituents from any SWMU at a treatment, storage, or disposal facility, regardless of the time at which the waste was placed in the SWMU.

COMMENT 124: DRAFT PERMIT MODULE VII.G.1, PAGE VII-11

A. Draft Permit Module Text

Action levels, described in the RFI guidance document referenced in Permit Condition VII.M.2.d.1) and the proposed regulations under Subpart S (Corrective Action for Solid Waste Management Units; Federal Register; Friday, July 27, 1990; pages 30797-30884, §§264.521, 264.522, and 264.523), shall be used by the Permittees to determine the need for further corrective actions under this Module. Except as otherwise specified in Permit Condition VII.Q, the Permittees shall conduct a CMS whenever concentrations of hazardous constituents in ground water, soils, or air exceed action levels for any environmental medium. However, action levels are not reference levels that trigger specific responses if exceeded. Instead, action levels help focus and prioritize project objectives and data requirements during the planning and implementing of site-specific RFIs. Thus, action levels are not the same as cleanup levels, although in some cases a final cleanup level may equal the action level.

B. Discussion of Draft Permit Condition

As written, the condition would require a CMS whenever concentrations above the action level are detected, even if the level is at or below background, because the specification of action levels ignores the presence of background concentrations of some hazardous constituents. As shown in the referenced proposed regulation (55 FR 30797 at 30876), action levels should be established in order to initiate a CMS at SWMUs where releases are suspected and should account for the background concentration of the constituent (see, e.g. 264.521 (e) (2)). If concentrations are below background, then there is no confirmation that a release has actually occurred and, therefore, a CMS is unnecessary. Accordingly, this provision should be revised to take into account the presence of background concentrations.

Further, the Draft Permit condition should allow Permittees to demonstrate that no action is necessary even if action levels are exceeded. In its preamble to the proposed Subpart S regulations, the EPA specifically stated: '...even if an action level has been exceeded, the proposal in § 264.514 would allow the owner/operator to demonstrate that no action was necessary. For example, if ground water were not a potential source of drinking water because of high levels of natural contamination, an owner/operator might successfully argue that cleanup was unnecessary. In this way, action levels would constitute reasonable presumptions." (55 FR 30797 at 30805). Further, the EPA instructed that "264.520 allows, <u>but does not require</u> ...a CMS when contamination exceeds action levels. In some cases, the Permittee may rebut the presumption that a CMS is required when action levels are exceeded..." 55 FR at 30814 (emphasis added). Thus, the Draft Permit condition should allow for a showing of no further action.

C. <u>Proposed Revision to Draft Permit Condition</u>

1. Module VII.G.1, Page VII-11

Action levels, described in the RFI guidance document referenced in Permit Condition VII.M.2.d.1) and the proposed regulations under Subpart S (Corrective Action for Solid Waste Management Units; Federal Register; Friday, July 27, 1990; pages 30797-30884, §§ 264.550, 264.551, and 264.552), shall be used by the Permittees to determine the need for further corrective actions under this Module. Except as otherwise specified in Permit Condition VII.Q, and unless the Permittees establish that no further action is required pursuant to § 264.514, the Permittees shall conduct a CMS whenever concentrations of hazardous constituents in ground water, soils, or air exceed action levels for any environmental medium or the background concentrations, whichever is higher. However, action levels are not reference levels that trigger specific responses if exceeded. Instead, action levels help focus and prioritize project objectives and data requirements during the planning and implementing of site-specific RFIs. Thus, action levels are not the same as cleanup levels, although in some cases a final cleanup level may equal the action level.

COMMENT 125: DRAFT PERMIT MODULE VII.I.3, PAGE VII-14

A. Draft Permit Module Text

In addition to the written reports required in Permit Condition VII.I.1 and VII.I.2, the Permittees shall provide, at the request of the Secretary, status reviews through semi-annual briefings with the Secretary.

B. Discussion of Draft Permit Condition

As written, this provision allows the Secretary to require a semi-annual briefing without providing any prior notice to the Permittees to prepare for such briefing. Such a request for a briefing is not required by the regulations and should be deleted. At a minimum, the Permittees need at least thirty days notice of a semi-annual briefing, and the condition should be deleted or revised accordingly.

C. Proposed Revision to Draft Permit Condition

Delete the condition or revise the condition as follows:

1. Module VII.I.3, Page VII-14

In addition to the written reports required in Permit Condition VII.I.1 and VII.I.2, the Permittees shall provide, at the request of the Secretary, status reviews through semi-annual briefings with the Secretary. The Secretary will notify the permittees at least 30 days prior to the semi-annual briefing.

COMMENT 126: DRAFT PERMIT MODULE VII.K., PAGE VII-16

A. Draft Permit Module Text

The Permittees shall notify the Secretary verbally of any release(s) from a SWMU or AOC of hazardous waste or hazardous constituents discovered during the course of ground water monitoring, field investigation, environmental auditing, or other means, no later than twenty-four (24) hours after discovery. This notification shall also be made in writing no later than fifteen (15) calendar days after discovery. Such newly-discovered releases may be from newly-identified SWMUs or AOCs, newly-constructed SWMUs, or from SWMUs or AOCs for which, based on the findings of the RFA, completed RFI, or investigation of an AOC(s), the Secretary had previously determined no further investigation was necessary. The notification shall include information concerning actual and/or potential impacts beyond the facility boundary and on human health and the environment, if available at the time of the notification. The Secretary may require further investigation and/or interim measures for the newly-identified release(s), and may require the Permittees to prepare a plan for the investigation and/or interim measure. The plan will be reviewed for approval as part of the RFI Work Plan or a new RFI Work Plan under Permit Condition . The Permit will be modified as specified in Permit Condition to incorporate the investigation, if required.

B. Discussion of Draft Permit Condition

This provision should be revised to clarify which bureau should be notified of a "newly discovered release." Moreover, such notification may be unnecessary since there is already a notification requirement in the New Mexico Water Quality Control Commission regulations.

C. Proposed Revision to Draft Permit Condition

1. Module VII.K., Page VII-16

The Permittees shall orally notify the Secretary of any release(s) from a SWMU or AOC of hazardous waste or hazardous constituents discovered during the course of ground water monitoring, field investigation, environmental auditing, or other means, no later than twenty-four (24) hours after discovery. This notification shall also be made in writing no later than fifteen (15) calendar days after discovery. Such newly-discovered releases may be from newly-identified SWMUs or AOCs, newly-constructed SWMUs, or from SWMUs or AOCs for which, based on the findings of the RFA, completed RFI, or investigation of an AOC(s), the Secretary had previously determined no further investigation was necessary. The notification shall include information concerning actual and/or potential impacts beyond the facility boundary and on human health and the environment, if available, at the time of the notification. The Secretary may require further investigation and/or interim measures for the

newly-identified release(s), and may require the Permittees to prepare a plan for the investigation and/or interim measure. The plan will be reviewed for approval as part of the RFI Work Plan or a new RFI Work Plan under Permit Condition VII.M.4. The Permit will be modified as specified in Permit Condition VII.B.3 to incorporate the investigation, if required. Notification under this condition shall be to the Director of the Hazardous and Radioactive Materials Bureau at 827-1561, 2044-A Galisteo Street, Santa Fe, NM 87505.

COMMENT 127: DRAFT PERMIT MODULE VII.M.2, PAGE VII-17

A. Draft Permit Module Text

The Permittees shall submit the RFI Work Plan, as specified in Permit Condition VII.U.3, to the Secretary within one hundred eighty (180) calendar days of the effective date of this Permit. The RFI Work Plan shall address releases of hazardous waste or hazardous constituents to the soil media, including other media as specified in this Module, for those SWMUs listed in Table 2 (Page VII-53). Historical analytical data may be submitted in justification of RFI Work Plan activities for each of these SWMUs.

The Permittees shall investigate ground water and air media under this Module if RFI activities show that significant releases have or are occurring at any of the SWMUs listed in Table 2 of this Module, or any AOCs listed in Table 3 if determined to be SWMUs, that could present a threat to human health or the environment via these pathways.

B. Discussion of Draft Permit Condition

The Permittees are requesting a determination of no further action (NFA) for the 15 SWMUs in Table 2 and the 13 AOCs on Table 3. This is based on risk assessments, proposed corrective actions and other supporting information provided below .

SWMUs

Based on highly conservative screening-level risk assessments presented in the Technical Support Document (TSD) *Exclusion/Inclusion of Solid Waste Management Units And Areas of Concern*, the NMED incorrectly, included based on alleged potential risks, 12 SWMUs in Module VII of the Draft Permit. The Permittees have established that these SWMUs do not present any threat to human health and the environment and should be designated NFA.

The Permittees had previously reported these SWMUs to the EPA Region VI prior to the NMED receiving authorization for the corrective action portions of RCRA. The EPA and the Permittees entered into a negotiated process to effect a voluntary release assessment (VRA) to characterize the nature and extent of potential hazardous constituents in these SWMUs. The VRA documented that the SWMUs contain concentrations of certain metals slightly elevated above background concentrations the reported concentrations are at levels well below action levels established for industrial facilities. Nevertheless, the NMED, using overly conservative risk assessments, incorrectly concluded that there are potential risks to human health and/or the environment associated with these SWMUs. In addition to calculating human health

and/or ecological risks associated with these SWMUs, the NMED has stated that data transmitted by the permittees are insufficient to support a NFA determination request.

The Permittees have compiled a significant amount of detail technical data to establish that the SWMUs at WIPP should be NFA. The Information below will supplement the *Final Voluntary Release Assessment/Correction Action Report* (DOE/WIPP 96-2209, November 12, 1996), the *Final Solid Waste Management Unit Assessment Report* (DOE/WIPP 97-2220, January 10, 1997), and the *Supplemental Information Requested by the New Mexico Environment Department for Solid Waste Management Units* (DOE/WIPP 92-2220a, May 1, 1997). These reports were submitted to the EPA Region VI Hazardous Waste Management Division and the NMED Hazardous and Radioactive Materials Bureau to support the permittees' request for NFA determinations at SWMUs identified at WIPP.

In addition, The Permittees have completed site-specific risk assessments for these SWMUs. The results of the risk assessments have been documented in *Human Health and Ecological Risk Assessment Waste Isolation Pilot Plant Solid Waste Management Units* (DOE/WIPP 98-2292, July 22, 1998). The specific SWMUs addressed in DOE/WIPP 98-2292 are:

SWMU 001g	H-14/P-1 Mud Pits
SWMU 001h	H-15/P-2 Mud Pits
SWMU 001j	P-3 Mud Pit
SWMU 001k	P-4 Mud Pit
SWMU 001l	WIPP-12/P-5 Mud Pits
SWMU 001m	P-6 Mud Pit
SWMU 001n	P-15 Mud Pit
SWMU 001s	ERDA-9 Mud Pit
SWMU 001t	IMC-374 Mud Pit
SWMU 001x	WIPP-13 Mud Pit
SWMU 004a	Portacamp Storage Yard, West Side
SWMU 007b	Evaporation Pond

The risk assessments revealed that the SWMUs do not present a risk to human health or the environment and NFAs should be granted. The information compiled for each SWMU (and previously submitted to the EPA Region VI and the NMED) and the results of the risk assessments are summarized for each SWMU in the following subsections.

a. SWMU 001g (H-14/P-1 Mud Pits)

The *Basic Data Report for Drillholes H-14 and H-15* (SAND89-0202, February 1990) describes the drilling of the H-14 borehole.

H-14 was drilled to a depth of 589 feet by Pennsylvania Drilling Company between September 25 and October 23, 1986. The abridged hole history contained in the 1990 report indicate that steel tanks were placed in the ground for use as mud pits. Excavation occurred at the site for the purpose of placing the steel tanks. The report indicates that only saturated brine and freshwater with a tracer added were used during the drilling. Additional constituents were used to plug and cement the hole.

The *Fenix and Scisson, Inc. ERDA P-1 Hole History Data* includes a complete hole history for the P-1 potash resource borehole.

Borehole P-1 was drilled by Pennsylvania Drilling Company between August 23 and September 2, 1976 to a depth of 1591 feet. The *Fenix & Scisson ERDA P-1 Hole History Data* states that the P-1 borehole was drilled using a salt-based mud. The detailed information does not include any documented use of any material containing hazardous constituents.

As described in *Human Health and Ecological Risk Assessment Waste Isolation Pilot Plant Solid Waste Management Units* (DOE/WIPP 98-2292, July 22, 1998), the concentrations of constituents in the H-14 and P-1 mud pits do not constitute a risk to either human health or the environment.

The information compiled for the H-14 and P-1 mud pits satisfy NFA Criterion 2: the site was not used for the management of hazardous constituents, and NFA Criterion 3: there was no release of hazardous constituents to the environment. The results of the risk assessments performed for the H-14/P-1 mud pits satisfy NFA Criterion 4: a release assessment indicates that the concentrations of hazardous constituents are at acceptably low levels and do not constitute a risk to human health and the environment. Therefore, the Permittees request that after appropriate public agency review and approval, a NFA determination be granted for SWMU 001g and that this SWMU be eliminated from the RCRA Part B Permit. When this determination is made, this site will be replanted with native vegetation in accordance with guidelines developed in the WIPP Land Management Plan (DOE/WIPP 93-004).

b. SWMU 001h (H-15/P-2 Mud Pits)

The *Basic Data Report for Drillholes H-14 and H-15* (SAND89-0202, February 1990) describes the drilling of the H-15 borehole.

H-15 was drilled to a depth of 900 feet by Pennsylvania Drilling Company between October 24 and November 14, 1986. The abridged hole history contained in the 1990 report indicate that a steel tank was placed in the ground for use as a mud pit. Excavation occurred at the site for the purpose of placing the steel tank. The report indicates that only saturated brine and freshwater with a tracer added were used during the drilling. Additional constituents were used to plug and cement the hole.

The *Fenix and Scisson, Inc. ERDA P-2 Hole History Data* includes a complete hole history for the P-2 potash resource borehole.

Borehole P-2 was drilled by Boyles Brothers Drilling Company between August 25 and September 7, 1976 to a depth of 1895 feet. The *Fenix and Scisson, Inc. ERDA P-2 Hole History Data* states that the P-2 borehole was drilled using air foam and a salt mud. The detailed information does not include any documented use of any material containing hazardous constituents.

As described in *Human Health and Ecological Risk Assessment Waste Isolation Pilot Plant Solid Waste Management Units* (DOE/WIPP 98-2292, July 22, 1998), the concentrations of constituents in the H-15 and P-2 mud pits do not constitute a risk to either human health or the environment.

The information compiled for the H-15 and P-2 mud pits satisfy NFA Criterion 2: the site was not used for the management of hazardous constituents, and NFA Criterion 3: there was no release of hazardous constituents to the environment. The results of the risk assessments performed for the H-15/P-2 mud pits satisfy NFA Criterion 4: a release assessment indicates that the concentrations of hazardous constituents are at acceptably low levels and do not constitute a risk to human health and the environment. Therefore, the Permittees request that, after appropriate public agency review and approval, a NFA determination be granted for SWMU 001h and that this SWMU be eliminated from the RCRA Part B Permit. When this determination is made, this site will be replanted with native vegetation in accordance with guidelines developed in the WIPP Land Management Plan (DOE/WIPP 93-004).

c. SWMU 001j (P-3 Mud Pit)

The *Fenix and Scisson, Inc. ERDA P-3 Hole History Data* includes a complete hole history for the P-3 potash resource borehole. The information from this reference is included in Appendix C.

Borehole P-3 was drilled by Pennsylvania Drilling Company between August 26 and September 7, 1976 to a depth of 1676 feet. The *Fenix and Scisson, Inc. ERDA P-3 Hole History Data* states that the P-3 borehole was drilled using mud, brine, and brine mud. The detailed information does not include any documented use of any material containing hazardous constituents.

As described in *Human Health and Ecological Risk Assessment Waste Isolation Pilot Plant Solid Waste Management Units* (DOE/WIPP 98-2292, July 22, 1998), the concentrations of constituents in the P-3 mud pit do not constitute a risk to either human health or the environment.

The information compiled for the P-3 mud pit satisfies NFA Criterion 2: the site was not used for the management of hazardous constituents, and NFA Criterion 3: there was no release of hazardous constituents to the environment. The results of the risk assessments performed for the P-3 mud pit satisfy NFA Criterion 4: a release assessment indicates that the concentrations of hazardous constituents are at acceptably low levels and do not constitute a risk to human health and the environment. Therefore, the Permittees request that after appropriate public agency review and approval, a NFA determination be granted for SWMU 001j and that this SWMU bm e eliminated from the RCRA Part B Permit. When this determination is made, this site will be replanted with native vegetation in accordance with guidelines developed in the WIPP Land Management Plan (DOE/WIPP 93-004).

d. SWMU 001k (P-4 Mud Pit)

The *Fenix and Scisson, Inc. ERDA P-4 Hole History Data* includes a complete hole history for the P-4 potash resource borehole.

Borehole P-4 was drilled by Boyles Brothers Drilling Company between August 28 and September 4, 1976 to a depth of 1857 feet. The *Fenix and Scisson, Inc. ERDA P-4 Hole History Data* states that the P-4 borehole was drilled using air foam and salt mud. The detailed information does not include any documented use of any material containing hazardous constituents.

As described in *Human Health and Ecological Risk Assessment Waste Isolation Pilot Plant Solid Waste Management Units* (DOE/WIPP 98-2292, July 22, 1998), the concentrations of constituents in the P-4 mud pit do not constitute a risk to either human health or the environment.

The information compiled for the P-4 mud pit satisfies NFA Criterion 2: the site was not used for the management of hazardous constituents, and NFA Criterion 3: there was no release of hazardous constituents to the environment. The results of the risk assessments performed for the P-4 mud pit satisfy NFA Criterion 4: a release assessment indicates that the concentrations of hazardous constituents are at acceptably low levels and do not constitute a risk to human health and the environment. Therefore, the Permittees request that after appropriate public agency review and approval, a NFA determination be granted for SWMU 001k and that this SWMU be eliminated from the RCRA Part B Permit. When this determination is made, this site will be replanted with native vegetation in accordance with guidelines developed in the WIPP Land Management Plan (DOE/WIPP 93-004).

e. SWMU 001l (WIPP-12/P-5 Mud Pits)

The following reports contain information on the WIPP-12 borehole.

2. *Data File Report ERDA-6 & WIPP-12 Testing* (Project Number NM78-648-811A/812B, February 1982)
3. *Basic Data Report for Drillhole WIPP 12* (SAND82-2336, October 1982)
4. *Basic Data Report Borehole WIPP-12 Deepening* (TME 3148, December 1982)

WIPP-12 was drilled to a depth of 2773 feet by Verna Drilling between November 9 and December 7, 1978. The hole history contained in the October 1982 report indicate that a salt-based mud was used for the drilling. Additives to the mud included starch, soda ash, caustic soda, and Drispac. Additional constituents were used to plug and cement the hole.

WIPP-12 was deepened to a depth of 3928 feet by Salazar Brothers Drilling between November 17, 1981 and January 1, 1982. The hole history contained in the December 1982 report indicate that the hole was drilled with a brine solution, until a pressurized brine reservoir was encountered at a depth of 3016 feet. The February 1982 report estimates that 2.5 million gallons of brine outflow from the Castile formation were pumped to shallow reserve pits and then into tanker trucks for removal. Drilling fluid additives included: brine-gel clay, starch, polymers, chelating compound, sulfate-asphaltic hydrocarbon compound, and caustic. At this point a brine-gel clay additive and a weighting agent were added to the drilling fluid.

The *Fenix and Scisson, Inc. ERDA P-5 Hole History Data* includes a complete hole history for the P-5 potash resource borehole.

Borehole P-5 was drilled by Pennsylvania Drilling Company between September 10 and September 21, 1976 to a depth of 1830 feet. The *Fenix and Scisson, Inc.*

ERDA P-5 Hole History Data states that the P-5 borehole was drilled using salt-based mud. Diesel oil was added to the drilling fluid on three separate occasions. Identified constituents used in the P-5 drilling are presented in Table 5. The report *Final Voluntary Release Assessment/Correction Action Report* (DOE/WIPP 96-2209, November 12, 1996) describes the results of the sampling and analysis process for the P-5 mud pit. Even though diesel oil was used to drill this borehole in 1976, natural attenuation and microbiological activity are responsible for the lack of detected volatile organic compound (VOC) concentrations in both TCLP and totals analyses for the samples collected in 1995 and 1996 from the P-5 mud pit.

As described in *Human Health and Ecological Risk Assessment Waste Isolation Pilot Plant Solid Waste Management Units* (DOE/WIPP 98-2292, July 22, 1998), the concentrations of constituents in the WIPP-12/P-5 mud pits do not constitute a risk to human health. The results of the ecological risk evaluation show that the calculated Hazard Index (HI) for the mud pits is greater than background. The calculated HI is directly related to concentrations of barium and the size of the WIPP-12 mud pits. An evaluation of the potential ecological receptor population impact demonstrated that the potential impacts were insignificant. No additional ecological risk assessment is recommended at this time.

The information compiled for the P-5 borehole and the risk assessment calculations satisfies NFA Criterion 4: there was a release of hazardous constituents to the environment, but a release assessment indicates that the concentrations of hazardous constituents are at acceptably low levels and do not constitute a risk to human health and the environment. The ecological risk management decisions appropriate for the WIPP-12 mud pits have not been defined. If no valued ecological resources to be protected are defined for these mud pits, then the information compiled to date satisfy NFA Criterion 4: there was a release of hazardous constituents to the environment, but a release assessment indicates that the concentrations of hazardous constituents are at acceptably low levels and do not constitute a risk to human health and the environment. The Permittees believe that the data compiled for this SWMU and other SWMUs in the Land Withdrawal Area demonstrate that there are no risks to human health or the environment. Therefore, the Permittees request that after appropriate public agency review and approval, a NFA determination be granted for SWMU 001L and that this SWMU be eliminated from the RCRA Part B Permit. When this determination is made, this site will be replanted with native vegetation in accordance with guidelines developed in the WIPP Land Management Plan (DOE/WIPP 93-004).

f. SWMU 001m (P-6 Mud Pit)

The *Fenix and Scisson, Inc. ERDA P-6 Hole History Data* includes a complete hole history for the P-6 potash resource borehole.

Borehole P-6 was drilled by Boyles Brothers Drilling Company between September 3 and September 16, 1976 to a depth of 1573 feet. The *Fenix and Scisson, Inc. ERDA P-6 Hole History Data* states that the P-6 borehole was drilled using salt-based mud. Additional constituents were used to plug and cement the hole. The detailed information does not include any documented use of any material containing hazardous constituents.

As described in *Human Health and Ecological Risk Assessment Waste Isolation Pilot Plant Solid Waste Management Units* (DOE/WIPP 98-2292, July 22, 1998), the concentrations of constituents in the P-6 mud pit do not constitute a risk to either human health or the environment.

The information compiled for the P-6 mud pit satisfies NFA Criterion 2: the site was not used for the management of hazardous constituents, and NFA Criterion 3: there was no release of hazardous constituents to the environment. The results of the risk assessments performed for the P-6 mud pit satisfy NFA Criterion 4: a release assessment indicates that the concentrations of hazardous constituents are at acceptably low levels and do not constitute a risk to human health and the environment. Therefore, the Permittees request that after appropriate public agency review and approval, a NFA determination be granted for SWMU 001m and that this SWMU be eliminated from the RCRA Part B Permit. When this determination is made, this site will be replanted with native vegetation in accordance with guidelines developed in the WIPP Land Management Plan (DOE/WIPP 93-004).

g. SWMU 001n (P-15 Mud Pit)

The *Fenix and Scisson, Inc. ERDA P-15 Hole History Data* includes a complete hole history for the P-15 potash resource borehole.

Borehole P-15 was drilled by Boyles Brothers Drilling Company between October 4 and October 14, 1976 to a depth of 1465 feet. The *Fenix and Scisson, Inc. ERDA P-15 Hole History Data* states that the P-15 borehole was drilled using air and salt-based mud. Additional constituents were used to plug and cement the hole. The detailed information does not include any documented use of any material containing hazardous constituents.

In January 1977, P-15 was reentered and the casing was perforated from 532 to 556 feet. In April 1977, the casing was perforated from 410 to 438 feet. (*Interim Data Report on the Geohydrology of the Proposed Waste Isolation Pilot Plant Site, Southeast New Mexico*, J.W. Mercer and B. R. Orr, USGS, 1979).

As described in *Human Health and Ecological Risk Assessment Waste Isolation Pilot Plant Solid Waste Management Units* (DOE/WIPP 98-2292, July 22, 1998),

the concentrations of constituents in the P-15 mud pit do not constitute a risk to either human health or the environment.

The information compiled for the P-15 mud pit satisfies NFA Criterion 2: the site was not used for the management of hazardous constituents, and NFA Criterion 3: there was no release of hazardous constituents to the environment. The results of the risk assessments performed for the P-15 mud pit satisfy NFA Criterion 4: a release assessment indicates that the concentrations of hazardous constituents are at acceptably low levels and do not constitute a risk to human health and the environment. Therefore, the Permittees request that after appropriate public agency review and approval, a NFA determination be granted for SWMU 001n and that this SWMU be eliminated from the RCRA Part B Permit. When this determination is made, this site will be replanted with native vegetation in accordance with guidelines developed in the WIPP Land Management Plan (DOE/WIPP 93-004).

h. SWMU 001s (ERDA-9 Mud Pit)

The report *Basic Data Report for Drillhole ERDA 9* (SAND79-0270, January, 1983) contains a complete hole history for the initial ERDA-9 drilling. The *WIPP Hydrology Program Waste Isolation Pilot Plant Southeastern New Mexico Hydrologic Data Report #5* (SAND87-7125, October 1987) contains information regarding the recompletion of the ERDA-9 borehole.

The ERDA-9 borehole was drilled by Sonora Drilling Company between April 28 and June 4, 1976 to a depth of 2,877 feet. The hole history states that the ERDA-9 borehole was drilled using spud mud to 495 feet, salt-based mud from 495 to 1060 feet, and an oil-emulsion drilling fluid for the remainder of the drilling. The oil-emulsion drilling fluid contained diesel oil, water, E Z Mul liquid emulsifier, GELTONE viscosifier, and calcium chloride. Additional constituents were used to plug and cement the hole.

From information contained in the January 1983 report, the oil-emulsion drilling fluid was contained in a closed system. Oil and mud separation occurred in steel tanks rather than mud pits. The report also includes a figure showing an emergency pit was constructed to support the drill stem testing performed as part of the development of the hole. There is no indication that the oil-emulsion drilling fluid was pumped into this pit.

The ERDA-9 borehole was recompleted in October 1986 as a Culebra observation well. Recompletion work involved cutting the 7-inch casing in ERDA-9 at a depth of 980 feet. A bridge plug was installed inside the casing at 760 feet. The well was flushed with approximately 300 barrels of fresh water, followed by 150 barrels of freshwater mixed with 25 gallons of MilChem-MD degreaser, and rinsed with 300 barrels of freshwater. Rinse solutions were collected in surface tanks and transported to an off-site disposal facility.

The report *Final Voluntary Release Assessment/Correction Action Report* (DOE/WIPP 96-2209, November 12, 1996) describes the results of the sampling and analysis process for the ERDA-9 mud pit. An oil-emulsion drilling fluid was used to drill this borehole in 1976 and there is no documentation that any quantity of the drilling fluid was placed in the emergency mud pit. If any of this drilling fluid entered the mud pit, natural attenuation and microbiological activity are responsible for the lack of detected volatile organic compound (VOC) concentrations in both TCLP and totals analyses for the samples collected in 1995 and 1996 from the ERDA-9 mud pit. Currently, a large portion of the mud pit is covered by a railroad embankment.

As described in *Human Health and Ecological Risk Assessment Waste Isolation Pilot Plant Solid Waste Management Units* (DOE/WIPP 98-2292, July 22, 1998), the concentrations of constituents in the ERDA-9 mud pit do not constitute a risk to either human health or the environment.

The information compiled for the ERDA-9 mud pit satisfies NFA Criterion 2: the site was not used for the management of hazardous constituents, and NFA Criterion 3: there was no release of hazardous constituents to the environment. The results of the risk assessments performed for the ERDA-9 mud pit satisfy NFA Criterion 4: a release assessment indicates that the concentrations of hazardous constituents are at acceptably low levels and do not constitute a risk to human health and the environment. Therefore, the Permittees request that after appropriate public agency review and approval, a NFA determination be granted for SWMU 001s and that this SWMU be eliminated from the RCRA Part B Permit. When this determination is made, this site will be replanted with native vegetation in accordance with guidelines developed in the WIPP Land Management Plan (DOE/WIPP 93-004).

i. SWMU 001t (IMC-374 Mud Pit)

The *Sundry Notices and Reports on Wells* describe the planned drilling and plugging plan for the IMC-374 potash exploration borehole. The *Recapitulation Test Well IMC 374* presents an abridged history of the drilling of this borehole. The IMC-374 borehole was drilled by Boyles Brothers Drilling Company between April 15 and April 27, 1965 to a depth of 1538 feet. Handwritten drilling instructions for the IMC-374 borehole prescribe drilling with a rock bit to the top of the salt formation, and drilling and coring with brine to the final depth. *Boyles Bros. Drilling Company Shift Reports* describe the drilling activities for the IMC-374 borehole. These records document rock bit drilling of the hole, use of mud, and brine as drilling fluids, and use of cement for plugging the borehole. The information from the these records is included as Appendix I. The detailed information does not include any documented use of any material containing hazardous constituents.

As described in *Human Health and Ecological Risk Assessment Waste Isolation Pilot Plant Solid Waste Management Units* (DOE/WIPP 98-2292, July 22, 1998), the concentrations of constituents in the IMC-374 mud pit do not constitute a risk to either human health or the environment.

The information compiled for the IMC-374 mud pit satisfies NFA Criterion 2: the site was not used for the management of hazardous constituents, and NFA Criterion 3: there was no release of hazardous constituents to the environment. The results of the risk assessments performed for the IMC-374 mud pit satisfy NFA Criterion 4: a release assessment indicates that the concentrations of hazardous constituents are at acceptably low levels and do not constitute a risk to human health and the environment. Therefore, the Permittees request that after appropriate public agency review and approval, a NFA determination be granted for SWMU 001t and that this SWMU be eliminated from the RCRA Part B Permit. When this determination is made, this site will be replanted with native vegetation in accordance with guidelines developed in the WIPP Land Management Plan (DOE/WIPP 93-004).

j. SWMU 001x (WIPP-13 Mud Pit)

The following reports contain information on the WIPP-13 borehole.

1. *Basic Data Report for Drillhole WIPP-13* (SAND79-0273, October 1982)
2. *Basic Data Report for Deepening of Drillhole WIPP-13* (SAND82-1880, 1982)
3. *Groundwater Flow Modeling of the Culebra Dolomite* (SAND89-7068)

Information compiled from these references is included in Appendix J.

WIPP-13 was drilled to a depth of 1025 feet by Pennsylvania Drilling Company July 24 through August 5, 1978. The hole history contained in the *Basic Data Report for Drillhole WIPP-13* (SAND79-0273, October 1982) report indicate that air and salt-based mud was used for the drilling. Additional constituents were used to plug and cement the hole.

WIPP-13 was reamed and deepened to a depth of 3868 feet by Pennsylvania Drilling Company between August 26 through October 3, 1979. A brine-gel mixture was use for 1979 activities. In addition, 2272 gallons of a 20 percent concentration hydrochloric acid solution were used in 1986 to complete the well for monitoring purposes.

As described in *Human Health and Ecological Risk Assessment Waste Isolation Pilot Plant Solid Waste Management Units* (DOE/WIPP 98-2292, July 22, 1998), the concentrations of constituents in the WIPP-13 mud pit do not constitute a risk to human health. The results of the ecological risk evaluation show that the

calculated Hazard Index (HI) for the mud pits is greater than background. The calculated HI is directly related to concentrations of barium and lead and the size of the WIPP-13 mud pit. An evaluation of the potential ecological receptor population impact demonstrated that the potential impacts were insignificant. No additional ecological risk assessment is recommended at this time.

The information compiled for the WIPP-13 mud pit satisfies NFA Criterion 2: the site was not used for the management of hazardous constituents, and NFA Criterion 3: there was no release of hazardous constituents to the environment. No documented use of any hazardous constituents has been identified. However, concentrations of two metals were elevated above background in the mud pit.

The ecological risk management decisions appropriate for the WIPP-13 mud pit have not been defined. If no valued ecological resources to be protected are defined for these mud pits, then the information compiled to date satisfy NFA Criterion 4: there was a release of hazardous constituents to the environment, but a release assessment indicates that the concentrations of hazardous constituents are at acceptably low levels and do not constitute a risk to human health and the environment. The Permittees believe that the data compiled for this SWMU and other SWMUs in the Land Withdrawal Area demonstrate that there are no risks to human health or the environment. Therefore, the Permittees request that after appropriate public agency review and approval, a NFA determination be granted for SWMU 001x and that this SWMU be eliminated from the RCRA Part B Permit. When this determination is made, this site will be replanted with native vegetation in accordance with guidelines developed in the WIPP Land Management Plan (DOE/WIPP 93-004).

k. SWMU 004a (Portacamp Storage Yard, West Side)

The Portacamp Storage Area is an active materials storage area. The area is primarily designed to store new parts and materials such as drums, pipe, and equipment. The area is also used to store and manage used hydraulic oil, used motor oil, used antifreeze, and discontinued oils prior to recycling or disposal at off-site facilities. The 300 by 300 feet storage complex is surrounded by a locked, eight-feet chain link fence. This complex is divided into two separately managed areas divided by an eight-feet chain link fence. The west side of the Portacamp area is managed by WID and the east side is managed by Sandia National Laboratories. The Portacamp Area is covered with compacted caliche. There is a covered drum storage area with a concrete pad and spill control devices.

As described in *Human Health and Ecological Risk Assessment Waste Isolation Pilot Plant Solid Waste Management Units* (DOE/WIPP 98-2292, July 22, 1998), the concentrations of constituents in the Portacamp Storage Area do not

constitute a risk to human health. Future routine exposure is unlikely, given site hazardous material training and RCRA compliance procedures.

The results of the ecological risk evaluation show that the calculated Hazard Index (HI) for the Portacamp Storage Area is greater than background. The calculated HI is directly related to concentrations of chromium and nickel and the size of the Portacamp Storage Area. An evaluation of the potential ecological receptor population impact demonstrated that the potential impacts were insignificant. No additional ecological risk assessment is recommended at this time.

The ecological risk management decisions appropriate for the Portacamp Storage Area have not been defined. If no valued ecological resources to be protected are defined for this area, then the information compiled to date satisfy NFA Criterion 4: there was a release of hazardous constituents to the environment, but a release assessment indicates that the concentrations of hazardous constituents are at acceptably low levels and do not constitute a risk to human health and the environment. The Permittees believe that the data compiled for this SWMU and other SWMUs in the Land Withdrawal Area demonstrate that there are no risks to human health or the environment. Therefore, the Permittees request that after appropriate public agency review and approval, a NFA determination be granted for SWMU 004a and that this SWMU be eliminated from the RCRA Part B Permit. When this determination is made and the site is decommissioned, this site will be replanted with native vegetation in accordance with guidelines developed in the WIPP Land Management Plan (DOE/WIPP 93-004).

l. SWMU 007b (Evaporation Pond)

This evaporation pond is located west of the Waste Handling Building and received water from personnel showers. Process knowledge for the site demonstrates that no hazardous constituents were introduced into the pond. The pond has been completely graded and lies within an area that receives routine outfall from stormwater and domestic water resulting from fire flow performance testing. It was been revegetated. This area was sampled as part of the RCRA Facility Assessment (RFA)in 1992 (*Assessment of Solid Waste Management Units at the Waste Isolation Pilot Plant,* NMED/WIPP 93-001, NMED/DOE/AIP-94/1, May 1994). Based on the results of the visual observations, sampling, and analysis results, the NMED concluded that the exposure potential for this SWMU range from extremely low to nonexistent, and that there were no areas of concern for the evaporation pond SWMU group.

As described in *Human Health and Ecological Risk Assessment Waste Isolation Pilot Plant Solid Waste Management Units* (DOE/WIPP 98-2292, July 22, 1998), The concentrations of constituents in the 007b evaporation pond do not constitute a risk to either human health or the environment.

The information compiled for the SWMU 007b Evaporation Pond satisfies NFA Criterion 2: the site was not used for the management of hazardous constituents, and NFA Criterion 3: there was no release of hazardous constituents to the environment. The results of the risk assessments performed for the SWMU 007b Evaporation Pond satisfy NFA Criterion 4: a release assessment indicates that the concentrations of hazardous constituents are at acceptably low levels and do not constitute a risk to human health and the environment. Therefore, the Permittees request that after appropriate public agency review and approval, a NFA determination be granted for SWMU 007b and that this SWMU be eliminated from the RCRA Part B Permit. This site has been replanted with native vegetation in accordance with guidelines developed in the WIPP Land Management Plan (DOE/WIPP 93-004).

AOCs

As identified by the NMED RCRA Facility Assessment (RFA) Report for the WIPP site (NMED/DOE/AIP 94-1, 1994), SWMU Group 013 included units intended for the storage and disposal of transuranic (TRU) mixed waste. The NMED did not further consider or investigate SWMU Group 013 during the RFA because these units had not yet managed hazardous or solid wastes, but left open the possibility of further consideration during the RCRA Part B permitting process or after waste management operations began at WIPP. In Module VII of the draft RCRA Permit, the NMED redesignated these units as Areas of Concern (AOCs). The Draft Permit has placed AOC Group 013 under an RFI schedule of compliance as summarized in Section 1.0, because: (1) The Permittees did not request a no further action (NFA) determination for these units as part of the Permit Application, (2) hazardous constituents will be managed at these units, and (3) a release assessment has not been performed.

The specific AOCs addressed below are:

AOC 013a	Waste Handling Building Unit - Container Storage Unit
AOC 013b	Parking Area Unit - Container Storage Unit
AOC 013c	Underground HWDU Panel 1 - Disposal Unit
AOC 013d	Underground HWDU Panel 2 - Disposal Unit
AOC 013e	Underground HWDU Panel 3 - Disposal Unit

As stated in 40 CFR 264.514 FR Vol. 55, No. 145, VI(D), p. 30808 (i.e., the proposed Subpart S rule), a SWMU is “any discernible unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. Such units include any area at a facility at which solid wastes have been routinely and systematically released.” the NMED correctly removed these units from the list of SWMUs, because no solid wastes have ever been managed in these units and they do not qualify as SWMUs under the definition. Similarly, the units do not meet the NMED’s own

definition of an AOC as an area which “may have received” waste. These units are not SWMUs or AOCs because they have never been used to manage solid or hazardous waste. Therefore, they should not be classified as AOCs for further investigation.

The permittees formally request a NFA determination for these AOCs for the following reasons:

1. No hazardous or solid wastes have been managed at these units so they do not qualify as SWMUs under the proposed Subpart S rule. These units meet NMED Criterion 2 established in Table 3 of the Technical Support Document (TSD) for Module VII of the Draft Part B Permit: “The site was not used for the management of hazardous constituents.”
2. AOCs 013d and 013e do not currently exist and therefore meet NFA Criterion 1 of the TSD: “The site does not exist.”
3. Future management of TRU mixed waste in the AOCs is the subject of the RCRA Part B Permit Application, the reason for the facility’s existence, and will be subject to the requirements for waste management as part of the final Permit.
4. A release assessment has been performed as part of the facility performance assessment, and waste management and corrective action plans are an integral part of the RCRA Part B application.

Sumps

In the *Final Solid Waste Management Unit Assessment Report (DOE/WIPP 97-2220)*, dated January 10, 1997, the Permittees requested No Further Action (NFA) determinations from the NMED for SWMU Group 010, Underground Shaft Sumps. This SWMU group included the following:

1. Salt Handling Shaft Sump (SWMU 010a)
2. Waste Handling Shaft Sump (SWMU 010b)
3. Exhaust Shaft Sump (SWMU 010c)
4. Air Intake Shaft Sump (SWMU 010d)

NFA determinations have been granted for SWMUs 010a and 010d. However, the NMED has not yet granted NFA status for the Waste Handling Shaft Sump and the Exhaust Shaft Sump, and has listed them as areas of concern (AOCs) in Module VII, Table 2 of the Draft RCRA Permit for the WIPP facility. As such, these two units are subject to the RFI schedule of compliance presented in Section 1.0 above. The Technical Support Document (TSD) for Draft Permit Module VII states that the two sumps have been retained as AOCs “because hazardous constituents have been identified in the sumps and a release assessment has not been performed.” The NMED’s determination was based on

the presence of increased volumes of brine in the Waste Handling Shaft Sump and the Exhaust Shaft Sump beginning in 1995. Sampling and analysis revealed that this brine was hazardous due to concentrations of lead that exceeded the EPA toxicity characteristic level.

AOC 010b is located at the base of the Waste Handling Shaft. The sump is 20 feet in diameter and extends 119 feet below the facility horizon. AOC 010c is located at the base of the exhaust shaft. The original area at the base of the Exhaust Shaft where water had collected in the past has been fitted with an approximately 3000 gallon fiberglass basin to collect any water from the exhaust shaft.

The RFA documents that visual inspections of the two AOCs by the NMED revealed clean, well-managed areas. Inspections, cleaning, and sampling of the shafts and sumps are regularly performed by the Permittees according to established procedures. The Waste Handling Shaft sump is unlined and thus composed primarily of rock (salt). The original area at the base of the Exhaust Shaft where water had collected in the past, was unlined. It has subsequently been fitted with an approximately 3,000 gallon fiberglass basin to collect any water from the exhaust shaft. Waste reportedly accumulated in both AOCs during the construction phase of the WIPP facility (cement grout, chemical grout, grease, etc.) was not apparent during the RFA. Based on these observations, the RFA states that the units display low release and exposure potential, and no areas of concern are expressed for the sumps as a group.

For both AOCs, increased volumes of brine, some of which contained elevated levels of lead, were measured during routine sampling in June 1995. Follow-up sampling was completed to confirm previous sample results and a corrective action plan was immediately implemented. The source of increased brine in the AOCs is water condensing in the Exhaust Shaft and seeping into the Exhaust Shaft. This brine, as it flows down the exhaust shaft walls, leaches lead from chain-link mesh attached to the shaft wall. Some of this brine then flowed into the Waste Shaft Sump. The installation of the fiberglass catchment basin at the base of the Exhaust Shaft has prevented any new flow of brine to the Waste Handling Shaft.

The brine-containing lead is currently managed and disposed of at an off-site treatment, storage, and disposal facility in accordance with the hazardous waste disposal requirements of 40 CFR 262. Sampling data from routine monitoring programs demonstrate that lead constituents remained in solution and did not produce hazardous levels of lead in the salt muck below both shafts. Analysis of the muck according to the EPA toxicity characteristic leaching procedure (TCLP) yielded lead concentrations that are below the toxicity characteristic (TC) regulatory level specified in 40 CFR 261. All those analytical results for lead are below 5 milligrams per liter (mg/L), the TC regulatory level.

Because the catchment basin has been installed below the Exhaust Shaft, and due to other facility operational changes to the ventilation, the flow of brine from the Exhaust Shaft to the Waste Handling Shaft sump has been severely restricted. Water collected in the Exhaust Shaft ancillary catchment basin is drained each week if 55 gallons or more of fluid has accumulated. Personnel responsible for this activity are thoroughly trained in hazardous waste management and are equipped with appropriate personal protective equipment for handling potentially contaminated water. There is no other potential pathway for exposure. Access to the Exhaust Shaft is restricted to authorized personnel only. Furthermore, the catchment basin is located directly beneath the Exhaust Shaft. Access to the catchment basin is restricted by a barricade. Authorized personnel while performing their work, remain upwind of the catchment basin. Thus, incidental and airborne pathways for worker exposure to basin constituents are negligible to nonexistent.

The analytical data demonstrate that lead has not precipitated from the brine in the past. Muck at the base of each shaft has been removed, and the fiberglass catchment basin captures Exhaust Shaft water before it can move to the Waste Handling Shaft. Consequently, any lead in the brine cannot travel to surrounding media. Because the bases of the shafts are at least 2150 below ground surface there is no potential pathway to ground water. Similarly, there is no significant air pathway, because due to the location of the catchment basin, airborne transport of lead contaminated brine or brine residues by the facility ventilation system is unlikely. There are no human or ecological receptors that can be exposed to the brine in the Exhaust Shaft Sump; therefore, further release assessment or risk assessment is not necessary at AOCs 010b and 010c.

The analytical and operational data for the sumps satisfy NFA Criterion (there was no release of hazardous constituents to the environment) and NFA Criterion 4 (a release assessment indicates that the concentrations of hazardous constituents are at acceptably low levels and do not constitute a risk to human health and the environment). Therefore, the permittees request that after appropriate public agency review and approval, a NFA determination be granted for AOC 010b and AOC 010c and that these AOCs be eliminated from the RCRA Permit.

Mud Pit Areas

These mud pit Areas of Concern (AOCs) were previously designated as Solid Waste Management Units (SWMUs) as part of the RCRA Permit Application. The NMED redesignated the original SWMUs as AOCs and included them in Module VII of the Draft Permit and in the RCRA Facility Investigation (RFI) schedule of compliance, because: (1) hazardous constituents have not been precluded, and (2) the release potential to the soil medium is high.

The Permittees formally request NFAs for the following:

AOC 001r	D-123 Mud Pit
AOC 001u	IMC-376 Mud Pit
AOC 001v	IMC-456 Mud Pit
AOC 001w	IMC-457 Mud Pit
AOC 001ac	DSP-207 Mud Pit
AOC 001ae	IMC-377 Mud Pit

The information compiled below was originally presented in the *Supplemental Information Requested by the New Mexico Environment Department for Solid Waste Management Units (DOE/WIPP 97-2220a),* dated May 1, 1997. This report was submitted to the EPA Region VI Hazardous Waste Management Division and the NMED Hazardous and Radioactive Materials Bureau to support the Permittees' request for NFA determinations at SWMUs identified at the WIPP.

a. AOC 001r (D-123 Mud Pit)

Hole D-123 (DSP-123) was drilled on behalf of the Duval Sulphur and Potash Company (DSP) for potash exploration before the WIPP facility was established. D-123 was drilled in 1953 by Weaver Drilling Company to a total depth of 1880 feet. The permittees obtained copies of the original Sundry Notices (i.e., "Notice of Intent to Drill" and "Subsequent Report of Abandonment" forms), as well as boring and core lithology logs, for this bore hole from the BLM office in Carlsbad. Additional drilling summary forms that document drilling activities for D-123 were provided by Western Agricultural Chemicals, Inc., which acquired DSP's interest in this hole.

The information compiled by the Permittees for the DSP bore hole is presented in Appendix D of *Supplemental Information Requested by the New Mexico Environment Department for Solid Waste Management Units (DOE/WIPP 97-2220a),* dated May 1, 1997. The drilling materials used to complete D-123, as documented in the Appendix D information, are presented in Table 1. As shown in Table 1 and the *Drilling Summary on DSP #123*, the principal drilling materials used at the D-123 hole were saturated brine and mud. The hole was plugged using standard commercial cement mixtures and drill cuttings. Therefore, the information compiled and reviewed by the Permittees includes no evidence that hazardous materials or materials containing hazardous constituents were used in the drilling of D-123.

In the *Technical Support Document Exclusion/Inclusion of Solid Waste Management Units and Areas of Concern* of the Draft Permit, the NMED stated that "local potash firms indicated that KCL/NaCL drilling mud solutions are standard practice, and diesel fuel has been used in drilling other potash boreholes". Apparently, the NMED has retained this unit as an AOC because of the potential use of diesel fuel. Information compiled by the Permittees for other

potash bore holes (i.e., P-1 through P-26) indicates that diesel fuel usage during drilling was an exception, not a standard practice. In addition, naturally occurring hydrocarbon compounds (crude oil, natural gas) are routinely encountered during oil and gas drilling that occurs in Eddy County New Mexico to this day. Because these materials are not considered to be hazardous wastes and current New Mexico regulations allow mud pit abandonment similar to that practiced in 1953, the potential usage of diesel fuel during drilling is not considered a potential environmental concern by New Mexico regulatory authorities. If any of this drilling fluid entered the mud pit, natural attenuation and microbiological activity would have decreased any volatile organic compound (VOC) concentrations to below detection limits. In addition, as described in *Human Health and Ecological Risk Assessment Waste Isolation Pilot Plant Solid Waste Management Units* (DOE/WIPP 98-2292, July 22, 1998), the concentrations of constituents in the other WIPP mud pits do not constitute a risk to either human health or the environment.

These reasons and the documentation in Appendix D of *Supplemental Information Requested by the New Mexico Environment Department for Solid Waste Management Units* supports the Permittees' request for a No Further Action determination at AOC 001r. This mud pit meets NFA Criterion 3 : there was no release of hazardous constituents to the environment. There is no evidence of any release. Even if there were a release, it is likely that this mud pit also meets NFA Criterion 4: there was a release, but the concentrations of hazardous constituents are at acceptable low levels, considering that the hole was drilled in 1953.

b. AOC 001u (IMC-376 Mud Pit)

Potash exploration bore hole IMC-376 was drilled by Boyles Brothers Drilling Company for the International Minerals and Chemicals Corporation (IMC). IMC-376 was drilled in 1965 to a total depth of 1702 feet. The permittees obtained copies of the original Sundry Notices (i.e., "Notice of Intent to Drill," "Subsequent Report of Abandonment," and "Recapitulation" forms), as well as drilling instructions, shift reports, and boring and core lithology logs, for this bore hole from the BLM office in Carlsbad. For IMC-376, internal IMC instructions to drillers, cementing reports, and Boyles Brothers Shift Reports (i.e., drilling logs/diaries) were provided by IMC.

The information compiled by the Permittees for the IMC-376 bore hole was presented in Appendix E of *Supplemental Information Requested by the New Mexico Environment Department for Solid Waste Management Units (DOE/WIPP 97-2220a),* dated May 1, 1997. The drilling materials used to complete these bore holes, as documented in the Appendix E information, are presented in Table 3. As shown in the Table and the Appendix, the principal drilling materials used at the IMC-376 bore hole were air and saturated brine. One of the shift reports indicates that an additive was used during hole casing. Although the record is not completely legible, the additive is either oil or O.L. The bore hole was

plugged using mud and standard commercial cement mixtures. Therefore, the information compiled and reviewed by the Permittees includes no evidence that hazardous materials or materials containing hazardous constituents were used during drilling activities. The documentation in Appendix E supports the Permittees' request for a No Further Action determination at AOC 001u.

In the *Technical Support Document Exclusion/Inclusion of Solid Waste Management Units and Areas of Concern* of the Draft Permit, the NMED stated that "local potash firms indicated that KCL/NaCL drilling mud solutions are standard practice, diesel fuel has been used in drilling other potash boreholes…a shift report for IMC-376 indicates the use of oil as an additive to the drilling fluid". Apparently, the NMED has retained this unit as an AOC because of the potential use of diesel fuel. The NMED incorrectly concludes that the potential use of oil was associated with drilling the hole. As noted above, the additive was actually used during casing. Information compiled by the Permittees for other potash bore holes (i.e., P-1 through P-26) indicates that diesel fuel usage during drilling was an exception, not a standard practice. In addition, naturally occurring hydrocarbon compounds (crude oil, natural gas) are routinely encountered during oil and gas drilling that occurs in Eddy County New Mexico to this day. Because these materials are not considered to be hazardous wastes and current New Mexico regulations allow mud pit abandonment similar to that practiced in 1965, the potential usage of diesel fuel during drilling is not considered a potential environmental concern by New Mexico regulatory authorities. If any of this drilling fluid entered the mud pit, natural attenuation and microbiological activity would have decreased any volatile organic compound (VOC) concentrations to below detection limits. In addition, as described in *Human Health and Ecological Risk Assessment Waste Isolation Pilot Plant Solid Waste Management Units* (DOE/WIPP 98-2292, July 22, 1998), the concentrations of constituents in the other WIPP mud pits do not constitute a risk to either human health or the environment.

These reasons and the documentation in Appendix D of *Supplemental Information Requested by the New Mexico Environment Department for Solid Waste Management Units* supports the Permittees' request for a No Further Action determination at AOC 001u. This mud pit meets NFA Criterion 3 : there was no release of hazardous constituents to the environment. There is no evidence of any release. Even if there was a release, it is likely that this mud pit also meets NFA Criterion 4: There was a release, but the concentrations of hazardous constituents are at acceptable low levels, considering that the hole was drilled in 1965.

c. AOC 001v (IMC-456 Mud Pit)

Potash exploration bore hole IMC-456 was drilled by Boyles Brothers Drilling Company for the International Minerals and Chemicals Corporation (IMC). IMC-456 was drilled in 1976 to a total depth of 1975 feet. The permittees obtained copies of the original Sundry Notices (i.e., "Notice of Intent to Drill," "Subsequent

Report of Abandonment," and "Recapitulation" forms), as well as boring and core lithology logs, for this bore hole from the BLM office in Carlsbad.

The information compiled by the Permittees for the IMC-456 bore hole is presented in Appendix E of *Supplemental Information Requested by the New Mexico Environment Department for Solid Waste Management Units (DOE/WIPP 97-2220a),* dated May 1, 1997. The drilling materials used to complete IMC-456, as documented in the Appendix E information, are presented in Table 3. As shown in Table 3, the principal drilling materials used at the IMC-456 hole were saturated brine and mud. The hole was plugged using standard commercial cement mixtures and drill cuttings. Therefore, the information compiled and reviewed by the Permittees includes no evidence that hazardous materials or materials containing hazardous constituents were used in the drilling of IMC-456.

In the *Technical Support Document Exclusion/Inclusion of Solid Waste Management Units and Areas of Concern* of the Draft Permit, NMED stated that "local potash firms indicated that KCL/NaCL drilling mud solutions are standard practice, diesel fuel has been used in drilling other potash boreholes". Apparently, NMED has retained this unit as an AOC because of the potential use of diesel fuel. Information compiled by the Permittees for other potash bore holes (i.e., P-1 through P-26) indicates that diesel fuel usage during drilling was an exception, not a standard practice. In addition, naturally occurring hydrocarbon compounds (crude oil, natural gas) are routinely encountered during oil and gas drilling that occurs in Eddy County New Mexico to this day. Because these materials are not considered to be hazardous wastes and current New Mexico regulations allow mud pit abandonment similar to that practiced in 1976, the potential usage of diesel fuel during drilling is not considered a potential environmental concern by New Mexico regulatory authorities. If any of this drilling fluid entered the mud pit, natural attenuation and microbiological activity would have decreased any volatile organic compound (VOC) concentrations to below detection limits. In addition, as described in *Human Health and Ecological Risk Assessment Waste Isolation Pilot Plant Solid Waste Management Units* (DOE/WIPP 98-2292, July 22, 1998), the concentrations of constituents in the other WIPP mud pit do not constitute a risk to either human health or the environment.

These reasons and the documentation in Appendix E of *Supplemental Information Requested by the New Mexico Environment Department for Solid Waste Management Units* supports the Permittees' request for a No Further Action determination at AOC 001r. This mud pit meets NFA Criterion 3 : there was no release of hazardous constituents to the environment. There is no evidence of any release. Even if there was a release, it is likely that this mud pit also meets NFA Criterion 4: There was a release, but the concentrations of hazardous constituents are at acceptable low levels, considering that the hole was drilled in 1976.

d. AOC 001w (IMC-457 Mud Pit)

Potash exploration bore hole IMC-457 was drilled by Boyles Brothers Drilling Company for the International Minerals and Chemicals Corporation (IMC). IMC-457 was drilled in 1976 to a total depths of 1885 feet. The permittees obtained copies of the original Sundry Notices (i.e., "Notice of Intent to Drill," "Subsequent Report of Abandonment," and "Recapitulation" forms), as well as boring and core lithology logs, for this bore hole from the BLM office in Carlsbad.

The information compiled by the permittees for the IMC-457 bore hole is presented in Appendix E of *Supplemental Information Requested by the New Mexico Environment Department for Solid Waste Management Units (DOE/WIPP 97-2220a),* dated May 1, 1997. The drilling materials used to complete IMC-457, as documented in the Appendix E information, are presented in Table 3. As shown in Table 3, the principal drilling materials used at the IMC-457 hole were saturated brine and mud. The hole was plugged using standard commercial cement mixtures and drill cuttings. Therefore, the information compiled and reviewed by the Permittees includes no evidence that hazardous materials or materials containing hazardous constituents were used in the drilling of IMC-456.

In the *Technical Support Document Exclusion/Inclusion of Solid Waste Management Units and Areas of Concern* of the Draft Permit, NMED stated that "local potash firms indicated that KCL/NaCL drilling mud solutions are standard practice, diesel fuel has been used in drilling other potash boreholes". Apparently, NMED has retained this unit as an AOC because of the potential use of diesel fuel. Information compiled by the Permittees for other potash bore holes (i.e., P-1 through P-26) indicates that diesel fuel usage during drilling was an exception, not a standard practice. In addition, naturally occurring hydrocarbon compounds (crude oil, natural gas) are routinely encountered during oil and gas drilling that occurs in Eddy County New Mexico to this day. Because these materials are not considered to be hazardous wastes and current New Mexico regulations allow mud pit abandonment similar to that practiced in 1976, the potential usage of diesel fuel during drilling is not considered a potential environmental concern by New Mexico regulatory authorities. If any of this drilling fluid entered the mud pit, natural attenuation and microbiological activity would have decreased any volatile organic compound (VOC) concentrations to below detection limits. In addition, as described in *Human Health and Ecological Risk Assessment Waste Isolation Pilot Plant Solid Waste Management Units* (DOE/WIPP 98-2292, July 22, 1998), the concentrations of constituents in the other WIPP mud pits do not constitute a risk to either human health or the environment.

These reasons and the documentation in Appendix E of *Supplemental Information Requested by the New Mexico Environment Department for Solid Waste Management Units* supports the Permittees' request for a No Further Action determination at AOC 001w. This mud pit meets NFA Criterion 3 : there

was no release of hazardous constituents to the environment. There is no evidence of any release. Even if there was a release, it is likely that this mud pit also meets NFA Criterion 4: There was a release, but the concentrations of hazardous constituents are at acceptable low levels, considering that the hole was drilled in 1976.

e. AOC 001ac (DSP-207 Mud Pit)

Hole DSP-207 was drilled on behalf of the Duval Sulphur and Potash Company (DSP) for potash exploration before the WIPP facility was established. DSP-207 was drilled in 1958 by Joy Drilling Company to a total depth of 1613 feet. The Permittees obtained copies of the original Sundry Notices (i.e., "Notice of Intent to Drill" and "Subsequent Report of Abandonment" forms), as well as boring and core lithology logs, for this bore hole from the BLM office in Carlsbad. Additional drilling summary forms that document drilling activities for DSP-207 were provided by Western Agricultural Chemicals, Inc., which acquired DSP's interest in this hole.

The information compiled by the Permittees for the DSP bore hole is presented in Appendix D of *Supplemental Information Requested by the New Mexico Environment Department for Solid Waste Management Units (DOE/WIPP 97-2220a),* dated May 1, 1997. The drilling materials used to complete D-207, as documented in the Appendix D information, are presented in Table 5. As shown in Table 5 and the *Drilling Summary on DSP#207*, the principal drilling materials used at the DSP-207 hole were saturated brine and mud. The hole was plugged using standard commercial cement mixtures and drill cuttings. Therefore, the information compiled and reviewed by the Permittees includes no evidence that hazardous materials or materials containing hazardous constituents were used in the drilling of DSP-207.

In the *Technical Support Document Exclusion/Inclusion of Solid Waste Management Units and Areas of Concern* of the Draft Permit, NMED stated that "local potash firms indicated that KCL/NaCL drilling mud solutions are standard practice, diesel fuel has been used in drilling other potash boreholes". Apparently, NMED has retained this unit as an AOC because of the potential use of diesel fuel. Information compiled by the Permittees for other potash bore holes (i.e., P-1 through P-26) indicates that diesel fuel usage during drilling was an exception, not a standard practice. In addition, naturally occurring hydrocarbon compounds (crude oil, natural gas) are routinely encountered during oil and gas drilling that occurs in Eddy County New Mexico to this day. Because these materials are not considered to be hazardous wastes and current New Mexico regulations allow mud pit abandonment similar to that practiced in 1953, the potential usage of diesel fuel during drilling is not considered a potential environmental concern by other New Mexico regulatory authorities. If any of this drilling fluid entered the mud pit, natural attenuation and microbiological activity would have decreased any volatile organic compound (VOC) concentrations to below detection limits. In addition, as described in *Human Health and Ecological*

Risk Assessment Waste Isolation Pilot Plant Solid Waste Management Units (DOE/WIPP 98-2292, July 22, 1998), the concentrations of constituents in the other WIPP mud pits do not constitute a risk to either human health or the environment.

These reasons and the documentation in Appendix D of *Supplemental Information Requested by the New Mexico Environment Department for Solid Waste Management Units* supports the Permittees' request for a No Further Action determination at AOC 001ac. This mud pit meets NFA Criterion 3 : there was no release of hazardous constituents to the environment. There is no evidence of any release. Even if there was a release, it is likely that this mud pit also meets NFA Criterion 4: There was a release, but the concentrations of hazardous constituents are at acceptable low levels, considering that the hole was drilled in 1953.

f. AOC 001ae (IMC-377 Mud Pit)

Potash exploration bore hole IMC-377 was drilled by Boyles Brothers Drilling Company for the International Minerals and Chemicals Corporation (IMC). IMC-376 was drilled in 1965 to a total depth of 1876 feet. the Permittees obtained copies of the original Sundry Notices (i.e., "Notice of Intent to Drill," "Subsequent Report of Abandonment," and "Recapitulation" forms), as well as drilling instructions, plugging sheet, and boring and core lithology logs, for this bore hole from the BLM office in Carlsbad. For IMC -377, internal IMC instructions to drillers, and plugging sheet were provided by IMC.

The information compiled by the Permittees for the IMC-377 bore hole was presented in Appendix E of *Supplemental Information Requested by the New Mexico Environment Department for Solid Waste Management Units (DOE/WIPP 97-2220a),* dated May 1, 1997. The drilling materials used to complete these bore holes, as documented in the Appendix E information, are presented in Table 6. As shown in the Table and the Appendix, the principal drilling materials used at the IMC-377 bore hole were air and saturated brine. The bore hole was plugged using mud and standard commercial cement mixtures. Therefore, the information compiled and reviewed by the Permittees includes no evidence that hazardous materials or materials containing hazardous constituents were used during drilling activities. The documentation in Appendix E supports the Permittees' request for a No Further Action determination at AOC 001ae.

In the *Technical Support Document Exclusion/Inclusion of Solid Waste Management Units and Areas of Concern* of the Draft Permit, NMED stated that "local potash firms indicated that KCL/NaCL drilling mud solutions are standard practice, diesel fuel has been used in drilling other potash". Apparently, NMED has retained this unit as an AOC because of the potential use of diesel fuel. Information compiled by the permittees for other potash bore holes (i.e., P-1 through P-26) indicates that diesel fuel usage during drilling was an exception,

not a standard practice. In addition, naturally occurring hydrocarbon compounds (crude oil, natural gas) are routinely encountered during oil and gas drilling that occurs in Eddy County New Mexico to this day. Because these materials are not considered to be hazardous wastes and current New Mexico regulations allow mud pit abandonment similar to that practiced in 1965, the potential usage of diesel fuel during drilling is not considered a potential environmental concern by other New Mexico regulatory authorities. If any of this drilling fluid entered the mud pit, natural attenuation and microbiological activity would have decreased any volatile organic compound (VOC) concentrations to below detection limits. In addition, as described in *Human Health and Ecological Risk Assessment Waste Isolation Pilot Plant Solid Waste Management Units* (DOE/WIPP 98-2292, July 22, 1998), the concentrations of constituents in the other WIPP mud pits do not constitute a risk to either human health or the environment.

These reasons and the documentation in Appendix E of *Supplemental Information Requested by the New Mexico Environment Department for Solid Waste Management Units* support the Permittees' request for a No Further Action determination at AOC 001ae. This mud pit meets NFA Criterion 3 : there was no release of hazardous constituents to the environment. There is no evidence of a release. Even if there was a release, it is likely that this mud pit also meets NFA Criterion 4: There was a release, but the concentrations of hazardous constituents are at acceptable low levels, considering that the hole was drilled in 1965.

Three Mudpit SWMUs

The Permittees believe they should be allowed to proceed with the corrective action proposed for these three mudpits as detailed in the Voluntary Release Assessment/Corrective Action Program Work Plan for Solid Waste Management Units (DOE/WIPP-Draft-2115) and that further investigation of these SWMUs is unnecessary.

During the preparation of the RCRA Facility Assessment (RFA) Report for WIPP (NMED/DOE/AIP 94/1), the Permittees and the NMED sampled soil at the following three mudpit SWMUs identified at the WIPP facility:

1. Badger Unit Drill Pad (SWMU 001o)
2. Cotton Baby Drill Pad (SWMU 001p)
3. DOE-1 Drill Pad (SWMU 001q)

SWMUs 001o and 001p are mudpits that resulted from the drilling of oil and gas exploration wells. SWMU 001q is a mudpit that resulted from WIPP site characterization activities. The RFA sampling involved the collection of soil samples from 5-8 feet below ground surface (bgs) that were analyzed for heavy metals, semivolatiles, and volatiles. For comparison purposes, a background soil

sample was collected from a dune blow out approximately one quarter mile to the west of the WIPP surface facilities.

The results of the RFA sampling documented that the three SWMUs contain concentrations of certain metals that were slightly elevated above background concentrations, but well below applicable action levels for industrial facilities proposed in 40 CFR 264.514 FR Vol. 55, No. 145, VI(D), p. 30813 (i.e., the proposed Subpart S rule). Because the sampling event occurred prior to when NMED obtained authorization for the corrective action portions of RCRA, the results were reported to the EPA. Although releases of hazardous constituents were not indicated by the analytical data, the Permittees proposed caliche caps as corrective actions for these three units in the *Voluntary Release Assessment/Corrective Action Program Work Plan for Solid Waste Management Units (VRA/CA Work Plan)* (DOE/WIPP Draft 2115) to ensure protection of human health and the environment. The EPA and the Permittees entered into a negotiated process regarding the proposed voluntary corrective actions at these SWMUs in order to head off the more costly and time consuming regulatory process associated with the approach mandated by the proposed conditions in the Draft RCRA Part B Permit. Pending the implementation of the proposed corrective actions, the Permittees requested a No Further Action (NFA) determination from the NMED for the three mudpits in the *VRA/CA Work Plan* and again in the *Final Voluntary Release Assessment/Corrective Action Report (Final VRA/CA Report)* (DOE/WIPP 96-2209).

The NMED has not yet granted NFA status for SWMUs 001o, 001p, and 001q. These three SWMUs have been retained on the list of SWMUs for the facility (as listed in Module VII, Table 2 of the Draft Permit), and are subject to the conditions listed in Section 1.0 above. The Technical Support Document (TSD) for Draft Permit Module VII states that in order to obtain NFA status for these SWMUs, “DOE must provide additional conclusive information to demonstrate that there will be no migration of hazardous wastes or constituents from each of the capped mudpits at levels that could present a hazard to human health and the environment.” The NMED further states that this demonstration could include the following: simplified migration scenarios and modeling, risk assessments, further delineation of nature and extent of constituents, and/or a complete corrective measures study that considers multiple remedies and remedy selection factors.

The Permittees maintain that the caps proposed in the *VRA/CA Work Plan* and the *Final VRA/CA Report* are appropriate corrective actions for SWMUs 001o, 001p, and 001q, and that NFA status is justified on this basis. Voluntary corrective action allows the permittee to perform remedial actions to appropriate SWMU conditions and environmental standards, thereby protecting human health and the environment without the burden of the formal regulatory process as outlined in Section 1.0 above. This will save time and money.

The Permittees have compiled the following information to support the proposed voluntary corrective actions and the request for NFA at SWMUs 001o, 001p, and 001q:

1. Drilling logs and records pertaining to the materials used at these SWMUs to support the analytical results obtained during the RFA
2. Results of a simplified modeling study performed on the proposed caps

This information supplements the *Final VRA/CA Report (DOE/WIPP 96-2209),* the *Final Solid Waste Management Unit Assessment Report (DOE/WIPP 97-2220)*, dated January 10, 1997, and the *Supplemental Information Requested by the New Mexico Environment Department for Solid Waste Management Units (DOE/WIPP 97-2220a),* dated May 1, 1997. These reports were submitted to the EPA Region VI Hazardous Waste Management Division and the NMED Hazardous and Radioactive Materials Bureau to support permittees' request for NFA determinations at SWMUs identified at the WIPP.

a. Drilling Records for the Badger Unit Mudpit (SWMU-001o)

The Badger Unit site resulted from the drilling of an oil and gas exploration well, and as such, was drilled under permit authority issued by the New Mexico Oil Conservation Division (NMOCD) and the Bureau of Land Management (BLM). Such sites are specifically exempted from RCRA regulation by the "Oil and Gas" exemption contained in 40 CFR 261.4(b)(5) (20 NMAC 4.1.500). Site abandonment and plugging requirements for oil and gas exploration wells are established in Section D, Rule 201, of the NMOCD regulations. Additionally, during the early 1970s when the Badger Unit was drilled, the BLM established general closure and reclamation requirements in the "Application for Permit to Drill" (APD) process.

The U.S. Geological Survey application for permit to drill records indicate that Badger Unit Federal-1 was drilled in 1973 by Clayton W. Williams, Jr. as the operator. The Superior Oil Company is listed as the lessee. Badger Unit Federal-1 was drilled as a wildcat petroleum exploration well to a total well depth of 15,225 feet (4640 meters). The well was abandoned in 1974 since no production of oil or gas was indicated, and structural position did not warrant further drilling. As for the mudpits, the initial development plans for drilling dated May 31, 1973, stated that the pits were to be leveled and the land returned as near as possible to original condition. The plan also states that the method of waste disposal indicated waste water would be trucked to appropriate disposal facilities. A Sundry Notices and Reports on Wells (Subsequent Report of Abandonment) further documents that the well site has been conditioned for final inspection.

The Badger Unit Federal-1 Location Plat indicates four individual mudpits. Three of the mudpits are identified as active pits each with approximate dimensions of 8 feet by 36 feet. The fourth pit is a reserve pit with dimensions of 12 feet by 125 feet. The entire complex measures approximately 64 feet by 125 feet. Currently, as indicated in the NMED's RCRA Facility Assessment (RFA), fragments of intact black polyethylene plastic liner (20 mil) protrude through the surface and occur as much as 6.0 meters (20 feet) outside the stained soil areas.

The principal drilling materials used at the Badger Unit complex were fresh water gel, lime slurry, saturated brine, brine, potassium chloride, X-C polymer, dilute brine, and sodium hydroxide. The well was completed using standard commercial cement mixtures and additives. Therefore, the information compiled and reviewed by the Permittees includes no evidence that hazardous materials or materials containing hazardous constituents were used at the Badger Unit complex. The documentation in Appendix A supports Permittees' request for a No Further Action determination at SWMU 001o.

Additional information on this SWMU can be found in the *VRA/CA Work Plan (DOE/WIPP Draft 2115)*, the *Final SWMU Assessment Report (DOE/WIPP 97-2220),* and the *Final VRA/CA Report (DOE/WIPP 96-2209)* including discussions of site geology and hydrogeology, RFA analytical results, applicable action level and background concentrations for constituents, and a detailed description of the proposed corrective action applicable to the Badger Unit mudpit SWMU. In addition, a numerical modeling study applicable to the cap proposed at the Badger Unit is summarized below.

Cotton Baby (1-Grace Cotton Baby Federal) was drilled in 1973 by Michael Grace Company as a wildcat petroleum exploration well. Like the Badger Unit, the Cotton Baby well was drilled under permit authority issued by the NMOCD and the BLM. The total well depth was 4,475 feet and was temporarily abandoned in 1974. Approval to re-enter the oil well was granted May 30, 1975. The well was deepened to a total well depth of 6700 feet and was plugged and abandoned in late 1975. The layout plan submitted to the U.S. Geological Survey identifies a reserve pit and a burn pit being planned. The plan also shows two proposed mudpit cells adjacent to the reserve pit. The RFA site inspection showed that the two mudpits were contiguous and managed as a single unit

U.S. Geological Survey documentation of the mudpit closure includes a letter dated May 27, 1981, sent to the District Manager-Bureau of Land Management informing that surface restoration of the Cotton Baby complex had been made and the location was ready for inspection. An acknowledgment of the satisfactory restoration of the surface of the Cotton Baby well was granted by the BLM Area Manager on June 8, 1981.

The principal drilling materials used at the Cotton Baby Unit complex were mud and saturated brine. “Spot oil” was used to free stuck pipes; however, the RFA analytical results indicated no releases of organic hazardous constituents at the SWMU above applicable Subpart S action levels. The well was completed using standard commercial cement mixtures and additives. In combination with the RFA analytical results as summarized in the *Final VRA/CA Report*, the information compiled and reviewed by the Permittees indicates that no hazardous constituents have been released at the Cotton Baby Unit complex above applicable risk-based levels.

Additional information on this SWMU can be found in the *VRA/CA Work Plan (DOE/WIPP Draft 2115)*, the *Final SWMU Assessment Report (DOE/WIPP 97-2220),* and the *Final VRA/CA Report (DOE/WIPP 96-2209)* including discussions of site geology and hydrogeology, RFA analytical results, applicable action level and background concentrations for constituents, and a detailed description of the proposed corrective action applicable to the Cotton Baby mudpit SWMU. In addition, a numerical modeling study applicable to the cap proposed at the Cotton Baby mudpit is summarized below.

The DOE-1 well pad was constructed in 1982 for the purpose of gathering stratigraphic, hydrologic and structural data. The borehole was drilled to 1239 meters (4065 feet) below the land surface to examine the nature of the Castile Formation underlying the Salado, including investigating a seismically inferred structural anomaly in the Castile Formation. Drilling and well completion activities are summarized in a report entitled *Basic Data Report For Borehole DOE-1 (TME 3159, 1982).* Included in Appendix C are applicable sections from the above referenced report *(TME 3159, 1982)*, which contains a summary of the purpose and description of borehole DOE-1, stratigraphy, an abridged history of borehole DOE-1, lithologic log, Project Quality Assurance Plan, Hole History, and Verification of Bore Site Location of DOE-1.

The DOE-1 drill pad consists of two mudpits. The RFA identified four pits; however, a site inspection by the Permittees showed that three of the pits were contiguous and will be managed as a single unit. The primary pit measures approximately 150 feet by 45 feet, and a second reserve pit encompasses an area approximately 50 feet by 75 feet.

Principal drilling materials used at the DOE-1 included fresh water gel used as spud mud, salt water gel, and saturated brine. The well was completed using standard commercial cement mixtures. Therefore, the information compiled and reviewed by the Permittees includes no evidence that hazardous materials or materials containing hazardous constituents were used at the DOE-1 complex. The documentation in Appendix C supports Permittees’ request for a No Further Action determination at SWMU 001q.

Additional information on this SWMU can be found in the *VRA/CA Work Plan (DOE/WIPP Draft 2115)*, the *Final SWMU Assessment Report (DOE/WIPP 97-2220),* and the *Final VRA/CA Report (DOE/WIPP 96-2209)* including discussions of site geology and hydrogeology, RFA analytical results, applicable action level and background concentrations for constituents, and a detailed description of the proposed corrective action applicable to the DOE-1 mudpit SWMU. In addition, a numerical modeling study applicable to the cap proposed at the DOE-1 mudpit is summarized below.

In response to NMED's request for modeling studies in the TSD, the Permittees have performed a simplified preliminary modeling study to demonstrate the effectiveness of the proposed corrective actions at SWMUs 001o, 001p, and 001q. The permittees' modeling study employed the widely-used Hydrologic Evaluation of Landfill Performance (HELP) computer program developed by the U.S. Army Corps of Engineers, and is summarized in Appendix D. The HELP model applied conservative assumptions regarding precipitation, evapotranspiration, cap thickness, drainage through the proposed caps, and site soil conditions. By predicting that infiltration of rainfall through the caps would be essentially zero inches, the simplified modeling study results presented in Appendix D demonstrated that the proposed caps were appropriate corrective actions for SWMUs 001o, 001p, and 001q.

C. <u>Proposed Revision to Draft Permit Condition</u>

1. Module VII.M.2, Page VII-17

Issue a determination of NFA for the SWMUs in Table 2 and the AOCs in Table 3. The determination of NFA for the three mudpit SWMUs is contingent upon completion of the Voluntary Release Assessment/Corrective Action Program Work Plan for Solid Waste Management Units (VRA/CA Work Plan) (DOE/WIPP-Draft-2115).

COMMENT 128: DRAFT PERMIT MODULE VII.M.3 AND TABLE 1 (#3), PAGE VII-19

A. Draft Permit Module Text

The Permittees shall correct these deficiencies and submit a modified RFI Work Plan, within thirty (30) calendar days of such written notification to the Secretary for review.

B. Discussion of Draft Permit Condition

Thirty calendar days may be insufficient to amend the RFI Work Plan, depending on the deficiencies found. Accordingly, the condition should provide the Permittees with a longer time period to amend the RFI Work Plan, if requested. Additionally, Table 1 needs to be revised to reflect this change.

C. Proposed Revision to Draft Permit Condition

1. Module VII.M.3 and Table 1 (#3), Page VII-19

The Permittees shall correct these deficiencies and submit a modified RFI Work Plan within thirty (30) calendar days of such written notification to the Secretary for review. The Permittees will automatically be granted an additional thirty (30) calendar days to submit the modified RFI Work Plan if requested, in writing, from the Secretary.

COMMENT 129: DRAFT PERMIT MODULE VII.N.2, PAGE VII-19

A. Draft Permit Module Text

Deviations from the approved RFI Work Plan which are necessary during implementation of the investigations must be approved by the Secretary and fully documented and described in the progress reports and in the RFI Report.

B. Discussion of Draft Permit Condition

This condition is impractical, cumbersome, and costly. Specifically, it requires the Permittees to halt field work and seek approval from the Secretary for any deviation from the approved RFI Work Plan, no matter how minor a deviation. This provision should be revised to reflect that only major deviations from the RFI Work Plan need to be approved by the Secretary and that the Secretary shall provide such review and approval on an expedited basis.

C. Proposed Revisions to Draft Permit Condition

1. Module VII.N.2, Page VII-19

Major deviations from the approved RFI Work Plan which are necessary during implementation of the investigations must be approved by the Secretary and fully documented and described in the progress reports and in the RFI Report. The Secretary shall provide such approval or disapproval of major deviations on an expedited basis.

COMMENT 130: DRAFT PERMIT MODULE VII.O.1, PAGE VII-19 AND VII-20

A. Draft Permit Module Text

Within sixty (60) calendar days after the completion of the RFI, the Permittees shall submit an RFI Report and Summary.

B. Discussion of Draft Permit Conditions

This provision is impractical, since, in reality, the RFI investigations will be finished over a multiple-year period. Instead, the condition should provide that the investigations and reports should be staggered. Furthermore, one report should not cover all SWMUs and AOCs.

C. Proposed Revision to Draft Permit Condition

1. Module VII.O.1, Page VII-19 and VII-20

The RFI Work Plan shall provide for the implementation of the RFI in stages. Within sixty (60) calendar days after the completion of each stage of the RFI, the Permittees shall submit a RFI Report and Summary.

COMMENT 131: DRAFT PERMIT MODULE VII.O.2 AND TABLE 1 (#5), PAGE VII-20

A. Draft Permit Module Text

If the Secretary disapproves the Report, the Secretary shall notify the Permittees in writing of the Report's deficiencies and require submittal of a revised RFI Report and Summary within thirty (30) calendar days of such notification, or the Secretary shall modify the RFI Report before approval.

B. Discussion of the Draft Permit Condition

Thirty calendar days may be insufficient to amend the RFI Report and Summary, depending upon the deficiencies found. Accordingly, the provision should provide the Permittees with a longer time period to amend the RFI Report and Summary, if requested. Additionally, Table 1 needs to be revised to reflect this change.

C. Proposed Revision to Draft Permit Condition

1. Module VII.O.2 and Table 1 (#5), Page VII-20

If the Secretary disapproves the Report, the Secretary shall notify the Permittees in writing of the Report's deficiencies and require submittal of a revised RFI Report and Summary within thirty (30) calendar days of such notification, or the Secretary shall modify the RFI Report before approval. The Permittees will automatically be granted an additional thirty (30) calendar days to submit the modified RFI Report and Summary if requested, in writing, from the Secretary.

2. Module VII.Q.3 and Table 1 (#11), Page VII-21

In the event of disapproval (in whole or in part) of the CMS Plan, the Secretary shall specify deficiencies in writing. The Permittees shall modify the plan to correct these within thirty (30) calendar days of receipt of the notice of deficiency. The Permittees will automatically be granted an additional thirty (30) calendar days to submit the modified CMS Plan requested in writing, from the Secretary.

3. Module VII.S.2 and Table 1 (#13), Page VII-22

If the Secretary disapproves the Report, the Secretary shall notify the Permittee in writing of the Report's deficiencies and require submittal of a revised CMS Report and Summary within thirty (30) calendar days of such notification. The Permittee will automatically be granted an additional thirty (30) calendar days to submit a modified CMS Report and Summary if requested, in writing, from the Secretary.

COMMENT 132: DRAFT PERMIT MODULE VII.U.3, PAGE VII-23

A. Draft Permit Module Text

The Permittees shall prepare an RFI Work Plan as specified in Permit Condition VII.M. The RFI Work Plan shall provide for and address the following information:

B. Discussion of Draft Permit Condition

Since many elements of the RFI Work Plan have already been developed under the Voluntary RA/CA program, and detailed discussions have been developed for the required elements (e.g., facility description, nature and extent of contamination, environmental setting, etc.), this condition should be revised to allow the Permittees to use information previously provided to the NMED.

C. Proposed Revision to Draft Permit Condition

1. Module VII.U.3, Page VII-23

The Permittees shall prepare a RFI Work Plan as specified in Permit Condition VII.M. The RFI Work Plan shall provide for and address the following information. The Permittees may use information provided to the NMED in existing corrective action documents.

COMMENT 133: DRAFT PERMIT MODULE VII.U.3.a.1(a), PAGE VII-24

A. Draft Permit Module Text

Map(s) depicting the information specified below. All maps shall be consistent with requirements set forth in 20 NMAC 4.1.900 (incorporating 40 CFR §270.14) and shall be of sufficient detail and accuracy to locate all current and future work performed at the site.

(1) general geographic location;

(2) property lines, with the owners of all adjacent property clearly indicated, and all land previously owned and/or used by the Permittees around the facility;

(3) topography, waterways, wetlands, floodplains, water features, and drainage patterns;

(4) all tanks, buildings, utilities, paved areas, rights-of-way, and other features;

(5) all SWMUs and AOCs;

(6) all known past solid or hazardous waste treatment, storage and disposal areas or units regardless of whether they were active on November 19, 1980;

(7) surrounding land uses (residential, commercial, agricultural, recreational); and

(8) the location of all production and ground water monitoring wells. These wells shall be clearly labeled and the ground and top of casing elevations included (these elevations may be included as an attachment).

B. Discussion of Draft Permit Condition

Compliance with this condition is impossible. The Permittees cannot develop maps for "all future work" since much of that work has not been identified. The provision should be revised to require such map development for planned future work.

C. Proposed Revision to Draft Permit Condition

1. Module VII.U.3.a.1(a), Page VII-24

Map(s) depicting the information specified below. All maps shall be consistent with requirements set forth in 20 NMAC 4.1.900 (incorporating 40 CFR §270.14) and shall be of sufficient detail and accuracy to locate all current and planned work performed at the site.

(1) general geographic location;

(2) property lines, with the owners of all adjacent property clearly indicated, and all land previously owned and/or used by the Permittees around the facility;

(3) topography, waterways, wetlands, floodplains, water features, and drainage patterns;

(4) all tanks, buildings, utilities, paved areas, rights-of-way, and other features;

(5) all SWMUs and AOCs;

(6) all known past solid or hazardous waste treatment, storage and disposal areas or units regardless of whether they were active on November 19, 1980;

(7) surrounding land uses (residential, commercial, agricultural, recreational); and

(8) the location of all production and ground water monitoring wells. These wells shall be clearly labeled and the ground and top of casing elevations included (these elevations may be included as an attachment).

COMMENT 134: DRAFT PERMIT MODULE VII.U.3.a.1(d), PAGE VII-25

A. Draft Permit Module Text

A reference to all environmental, geologic, and hydrogeologic studies performed by any person or entity, at or near the facility, with a short summary of the purpose, scope, and significant findings thereof.

B. Discussion of Draft Permit Condition

The Draft Permit condition should not require the Permittees to reference “all” studies because the list of required information would be too extensive. The great deal of study associated with the WIPP Project and the mineral exploration and development in the immediate vicinity of the WIPP could result in tens of thousands of pages of information taken from several thousand reference documents. The Permittees need to have the flexibility to use some appropriate subset of "all" the information that is available.

C. Proposed Revision to Draft Permit Condition

1. Module VII.U.3.a.1(d), Page VII-25

A reference to a representative number of relevant environmental, geologic, and hydrogeologic studies performed by any person or entity, at or near the facility, with a short summary of the purpose, scope, and significant findings thereof.

COMMENT 135: DRAFT PERMIT MODULE VII.U.3.a.2(a)(2), PAGE VII-25

A. Draft Permit Module Text

quantities of solid, hazardous, and radiochemical wastes;

B. Discussion of Draft Permit Condition

It may be impossible to quantify solid waste placed in the SWMU mudpits based on the historical information that is available.

C. Proposed Revision to Draft Permit Condition

1. Module VII.U.3.a.2(a)(2), Page VII-25

quantities of solid, hazardous, and radiochemical wastes, to the extent known;

COMMENT 136: DRAFT PERMIT MODULE VII.U.3.a.2(b)(2), PAGE VII-25

A. <u>Draft Permit Module Text</u>

all potential migration pathways including information on geology, pedology, hydrogeology, physiography, hydrology, water quality, meteorology, and air quality; and

B. <u>Discussion of Draft Permit Condition</u>

This condition is overly broad. Specifically, it requires the inclusion of information that may not be relevant to the SWMU, the releases, or the media of concern. It should be revised to include only relevant information.

C. <u>Proposed Revision to Draft Permit Condition</u>

1. Module VII.U.3.a.2(b)(2), Page VII-24

all potential migration pathways including relevant information on geology, pedology, hydrogeology, physiography, hydrology, water quality, meteorology, and air quality; and

COMMENT 137: DRAFT PERMIT MODULE VII.U.3.b(2), PAGE VII-27

A. Draft Permit Module Text

The Permittees shall describe in detail a program designed to characterize soil and rock units above the water table. Such characterization shall include, but is not limited to, the following information: surface soil distribution; soil profile, including ASTM and USCS classifications of soils; transects of soil stratigraphy; saturated hydraulic conductivity; porosity; cation exchange capacity (CEC); soil pH; particle size distribution; depth to water table; moisture content; effect of stratification on unsaturated flow; infiltration; evapotranspiration; water balance scenarios; residual concentration of contaminants in soil; total natural organic carbon content; and mineral and metal content.

B. Discussion of Draft Permit Condition

This provision requires extensive characterization of soils which may not be appropriate for the types and limited extent of the releases from the WIPP SWMUs. Performing the suggested investigations could result in more environmental harm from drilling and trenching than the benefit gained from the information. Accordingly, the provision should be revised to require the description of "an appropriate" program.

In addition, this section should prescribe detailed characterization of soil to the water table only if necessary (i.e., if releases to the water table are possible).

C. Proposed Revision to Draft Permit Condition

1. Module VII.U.3.b(2), Page VII-27

The Permittees shall describe in detail an appropriate program designed to characterize soil and rock units above the water table to the extent necessary to make remediation decisions. Such characterization may include, but is not limited to, the following information: surface soil distribution; soil profile, including ASTM and USCS classifications of soils; transects of soil stratigraphy; saturated hydraulic conductivity; porosity; cation exchange capacity (CEC); soil pH; particle size distribution; depth to water table; moisture content; effect of stratification on unsaturated flow; infiltration; evapotranspiration; water balance scenarios; residual concentration of contaminants in soil; total natural organic carbon content; and mineral and metal content.

COMMENT 138: DRAFT PERMIT MODULE VII.U.3.c, PAGE VII-28

A. Draft Permit Module Text

The Permittees shall prepare an RFI Work Plan as specified in Permit Condition VII.M. The RFI Work Plan shall provide for and address the following information:

c. Source Characterization

The Permittees shall describe in detail a program designed to completely characterize the nature, rate, and extent of waste contamination and areas where wastes have been placed, including quantification of the following specific characteristics at each source area:

1) Unit/disposal area characteristics, including but not limited to: location of unit/disposal area; type of unit/disposal area; design features; operating practices (past and present); period of operation; age of unit/disposal area; general physical conditions; and method used to close the unit/disposal area.

2) Waste characteristics, including but not limited to: type of waste placed in unit (hazardous classification, quantity, chemical composition); physical and chemical characteristics (physical form, physical description, temperature, pH, general chemical class, molecular weight, density, boiling point, viscosity, solubility in water, solubility in solvents, cohesiveness, vapor pressure); and migration and dispersal characteristics of the waste (sorption coefficients, biodegradability, photodegradation rates, hydrolysis rates, chemical transformations).

B. Discussion of Draft Permit Condition

Since the Permittees have already compiled the available information for these units, the subparts on the disposal area and waste characteristics should be accompanied by the phrases "as applicable" or "as discernible".

C. Proposed Revision to Draft Permit Condition

1. Module VII.U.3.c, Page VII-28

The Permittees shall describe in detail a program designed to completely characterize the nature, rate, and extent of waste contamination and areas where

wastes have been placed, including quantification of the following specific characteristics, as applicable and discernible, at each source area:

1) Unit/disposal area characteristics, including but not limited to: location of unit/disposal area; type of unit/disposal area; design features; operating practices (past and present); period of operation; age of unit/disposal area; general physical conditions; and methods used to close the unit/disposal area.

2) Waste characteristics, as appropriate, including but not limited to: type of waste placed in unit (hazardous classification, quantity, chemical composition); physical and chemical characteristics (physical form, physical description, temperature, pH, general chemical class, molecular weight, density, boiling point, viscosity, solubility in water, solubility in solvents, cohesiveness, vapor pressure); and migration and dispersal characteristics of the waste (sorption coefficients, biodegradability, photodegradation rates, hydrolysis rates, chemical transformations).

COMMENT 139: DRAFT PERMIT MODULE VII.U.3.d, PAGE VII-28 TO VII-30

A. <u>Draft Permit Module Text</u>

Contamination Characteristics

The Permittees shall describe in detail a program to collect analytical data on ground water, soils, surface water, sediment, and subsurface gas contamination when necessary to characterize contamination from a SWMU. The data shall be sufficient to define the extent, origin, direction, and rate of movement of contaminant plumes. Data required shall include time and location of sampling, media sampled, concentrations found, conditions during sampling, and the identity of the individual(s) performing the sampling and analysis. All media (soil and including those media specified in this Module) shall be investigated (see Permit Condition VII.M [RFI Work plan]). If the Permittees believe certain media could not be affected by a release from a specific SWMU, a detailed justification for not investigating those media shall be provided. The Permittees shall address the following types of contamination at the facility as appropriate:

1) Ground Water Contamination

The RFI Work Plan shall describe in detail a program of ground water investigation to characterize any ground water plumes of contamination at the facility that are not subject to corrective action requirements of 20 NMAC 4.1.500 (incorporating 40 CFR §264.100). The Permittees shall document the procedures used to characterize the nature, rate, and extent of ground water contamination (e.g., well design, well construction, geophysical methods employed, ground water modeling, etc.). The program shall at a minimum provide the following information:

a) a description of the horizontal and vertical nature, rate, and extent of any immiscible or dissolved plume(s) originating from the facility;

b) the horizontal and vertical direction of contamination movement;

c) the velocity of contaminant movement;

d) the horizontal and vertical concentrations of any 20 NMAC 4.1.500 (incorporating 40 CFR §264, Appendix IX) constituents;

e) an evaluation of factors influencing the plume movement; and

f) an extrapolation of future contaminant movement.

2) Soil Contamination

The Permittees shall describe in detail a program to characterize contamination of soil and rock units above the water table in the vicinity of the contaminant release. The program shall provide for the following information:

a) a description of the vertical and horizontal nature, rate, and extent of contamination;

b) a description of contaminant and soil chemical properties within the contaminant source area. This description shall include contaminant solubility, speciation, adsorption, leachability, exchange capacity, biodegradability, hydrolysis, photolysis, oxidation, natural total organic carbon content, and other factors that might affect contaminant migration and transformation.

c) plume migration and transformation; specific contaminant concentrations; the velocity and direction of contaminant movement; and an extrapolation to future contaminant movement.

3) Surface Water Contamination

The Permittees shall describe in detail a program to characterize contamination in surface water bodies resulting from contaminant releases at the facility. The Permittees shall document the procedures used to characterize the nature, rate, and extent of surface water contamination. This program shall at a minimum provide the following information:

a) a description of the horizontal and vertical extent of any immiscible or dissolved plumes originating from the facility, and the extent of contamination in the underlying sediments;

b) the horizontal and vertical direction and velocity of contaminant movement;

c) an evaluation of the physical, biological, chemical, and radiochemical factors influencing contaminant movement;

d) an extrapolation of future contaminant movement; and

e) a description of the chemistry and radiochemistry of the contaminated surface waters and sediments. This includes determining the pH, total dissolved solids, specific contaminant concentrations, etc.

4) Air Contamination

The Permittees shall describe in detail a program to characterize particulate and gaseous contaminants released into the atmosphere. This investigation shall provide the following information:

a) a description of the horizontal and vertical direction and velocity of contaminant movement;

b) the rate and amount of the release;

c) the chemical, radiochemical, and physical composition of the contaminants released, including horizontal and vertical concentration profiles; and

d) the possibility of future airborne releases.

5) Subsurface gas

The Permittees shall describe in detail a program to characterize the nature, rate, and extent of releases of reactive gases into the subsurface. The Permittees shall document the procedures used to characterize the nature, rate, and extent of subsurface gas contamination. This program shall at a minimum provide the following information:

a) provisions for monitoring subsurface gases release from any SWMU; and

b) an assessment of the potential for these releases to pose a threat to human health and the environment.

B. <u>Discussion of Draft Permit Condition</u>

This condition's requirements are too broad. Surface water and subsurface gas should be deleted from this section since they are not media of interest for the RFI according to the TSD. The groundwater and air sections should be qualified to state that characterization will be performed only if deemed necessary based

on significant releases of constituents to soil observed at the SWMUs that could impact these media.

Further, as to groundwater contamination, this condition is impermissibly broad as it goes beyond the applicable regulatory provisions governing the SWMU corrective action process[1]. Specifically, the RCRA provision governing the SWMU corrective process provides, in relevant part, that the permitting agency (i.e., the NMED) must require "corrective action for all releases of hazardous waste or constituents from any solid waste management unit..." See 42 U.S.C. § 6924(u) (emphasis added). Similarly, this provision's implementing regulations promulgated by the EPA and incorporated by reference in New Mexico, provide, in relevant part, that "[the owner or operator of a facility seeking a permit" under RCRA must institute corrective action "as necessary to protect human health and the environment for all releases of hazardous waste or constituents from any solid waste management unit at the facility...." See 40 CFR § 264.10(a) (emphasis added).

Because the above-referenced RCRA statutory and regulatory provisions authorize corrective action (and, thus, remedial investigation) only with respect to releases from SWMUs, the NMED is precluded from imposing corrective action requirements other than with respect to such releases. Thus, because the above-referenced Draft Permit groundwater investigation requirement is not limited to the characterization of groundwater contamination caused by releases from SWMUs, it is impermissibly broad and the NMED has exceeded its authority to require corrective action[2]. Accordingly, this Draft Permit condition should be revised to limit groundwater investigations to the characterization of groundwater contamination caused by releases from SWMUs.

C. <u>Proposed Revision to Draft Permit Condition</u>

1. Module VII.U.3.d, Page VII-28 to VII-31

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1 Applicable statutory and regulatory provisions governing the SWMU corrective action process also govern the Draft Permit's sought-after remedial investigation of groundwater. There are no applicable statutory or regulatory provisions which expressly govern or refer to "remedial investigations." Rather, the term "remedial investigation' appears in the proposed Subpart S regulations.

2 Moreover, groundwater investigations related to releases from SWMUs should not be addressed in the corrective action module of the Draft Permit because groundwater monitoring is addressed in module V (Ground-water detection monitoring), which deals with groundwater protection pursuant to 20NMAC 4.1.500 §§ 264.90 to 264.100.

The Permittees shall describe in detail a program to collect analytical data on ground water and soil contamination when necessary to characterize contamination from a SWMU. The data shall be sufficient to define the extent, origin, direction, and rate of movement of contaminant plumes. Data required shall include time and location of sampling, media sampled, concentrations found, conditions during sampling, and the identity of the individual(s) performing the sampling and analysis. All media (soil and including those media specified in this Module) shall be investigated (see Permit Condition VII.M [RFI Work Plan]). If the Permittees believe certain media could not be affected by a release from a specific SWMU, a detailed justification for not investigating those media shall be provided. The Permittees shall address the following types of contamination at the facility as appropriate:

1) Ground Water Contamination

If necessary, based on the extent of the releases to the soil, the RFI Work Plan shall describe in detail a program of ground water investigation to characterize any ground water plumes of contamination at the facility that are released from or related to any solid waste management unit. The Permittees shall document the procedures used to characterize the nature, rate, and extent of such ground water contamination (e.g., well design, well construction, geophysical methods employed, ground water modeling, etc.). The program shall at a minimum provide the following information:

a) a description of the horizontal and vertical nature, rate, and extent of any immiscible or dissolved plume(s) originating from the SWMU;

b) the horizontal and vertical direction of contamination movement;

c) the velocity of contaminant movement;

d) the horizontal and vertical concentrations of any 20 NMAC 4.1.500 (incorporating 40 CFR § 264, Appendix IX) constituents;

e) an evaluation of factors influencing the plume movement; and

f) an extrapolation of future contaminant movement.

2) Soil Contamination

The Permittees shall describe in detail a program to characterize contamination of soil and rock units above the water table in the vicinity of the contaminant release. The program shall provide for the following information as appropriate for the nature of the releases:

a) a description of the vertical and horizontal nature, rate, and extent of contamination;

b) a description of contaminant and soil chemical properties within the contaminant source area. This description shall include contaminant solubility, speciation, adsorption, leachability, exchange capacity, biodegradability, hydrolysis, photolysis, oxidation, natural total organic carbon content, and other factors that might affect contaminant migration and transformation.

c) plume migration and transformation; specific contaminant concentrations; the velocity and direction of contaminant movement; and an extrapolation to future contaminant movement.

COMMENT 140: DRAFT PERMIT MODULE VII.U.3.i, PAGE VII-35

A. <u>Draft Permit Module Text</u>

i. Community Relations Plan

The Permittees shall prepare a plan for dissemination of information to the public regarding investigation activities and results. The Community Relations Plan shall include:

1) establishing a facility mailing list of interested persons and entities pursuant to 20 NMAC 4.1.1103 (referencing 40 CFR §124.10(c)(1)(ix)) and updating it semiannually as specified in Permit Condition VII.D.2.a;

2) informal meetings, including briefings and workshops as appropriate, with the public and local officials before and during the RFI process, which includes activities associated with the RFI Work Plan and RFI Report;

3) news releases, fact sheets, approved RFI Work Plans, RFI Reports, Special Permit Conditions Reports and publicly available quarterly progress reports which explain the progress and conclusions of the RFI;

4) creation of public information repositories and reading rooms;

5) updates of materials in the information repositories and reading rooms;

6) quarterly technical progress reports for the Secretary; and

7) procedures for immediate notification of affected persons or entities in case of a newly discovered off-site release which could impact them.

B. <u>Discussion of Draft Permit Condition</u>

This condition is overly broad and should not be applied to this module.

C. <u>Proposed Revision to Draft Permit Condition</u>

Delete this condition.

COMMENT 141: DRAFT PERMIT MODULE VII.U.5, PAGE VII-36 AND VII-37

A. Draft Permit Module Text

The Permittees shall analyze all facility investigation data collected during the RFI process and prepare a detailed report on the nature, rate, and extent of contamination at the facility including sources and migration pathways. All information generated during the investigation shall be presented and analyzed. All evidence and procedures used for making any determinations (e.g., velocity of groundwater, nature, rate, and extent of contamination) shall be fully documented. The report shall describe the nature, rate, and extent of contamination (qualitative/quantitative) in relation to background levels indicative for the area. The report shall contain the results of all tests, calculations, inspections, record searches, and observations. It shall contain soil and ground water contamination profiles, statistical comparisons, and the results of all sampling events conducted as part of the investigation. It shall display results in tables, graphs, maps, and cross sections as discussed in the Data Management Plan and Permit Condition VII.U.3.g.2).

The Permittees shall identify all relevant and applicable standards for the protection of human health or the environment (e.g., National Ambient Air Quality Standards, Federally-approved State water quality standards, ground water protection standards, etc.)

Data shall be evaluated to ensure it is sufficient in quality (e.g., quality assurance procedures have been followed) and quantity to describe the nature, rate, and extent of contamination, to evaluate the potential threat to human health or the environment, and to support a CMS, if required. The report shall present all data in an Appendix.

B. Discussion of Draft Permit Condition

This provision should be revised to reflect that soil is the media of concern. In particular, emphasis of RFI Report requirements on groundwater data should be limited or reduced because soil will be the focus.

Furthermore, the extensive requirements for soil characterization may not be appropriate for the types and limited extent of the releases from WIPP SWMUs. Performing the required investigations could result in more environmental harm from drilling and trenching than the potential benefit from the information.

Finally, this condition overuses the term "all". The term is not needed in this condition and should be deleted.

C. <u>Proposed Revision to Draft Permit Condition</u>

1. Module VII.U.5, Page VII-36 and VII-37

The Permittees shall analyze facility investigation data collected during the RFI process and prepare a detailed report on the nature, rate, and extent of contamination at the facility including sources and migration pathways. Information generated during the investigation shall be presented and analyzed. Evidence and procedures used for making any determinations (e.g., velocity of groundwater, nature, rate, and extent of contamination) shall be fully documented. The report shall describe the nature, rate, and extent of contamination (qualitative/quantitative) in relation to background levels indicative for the area. The report shall contain the results of tests, calculations, inspections, record searches, and observations. It shall contain soil and ground water (as applicable) contamination profiles, statistical comparisons, and the results of sampling events conducted as part of the investigation. It shall display results in tables, graphs, maps, and cross sections as discussed in the Data Management Plan and Permit Condition VII.U.3.g.2).

The Permittees shall identify relevant and applicable standards for the protection of human health or the environment (e.g., National Ambient Air Quality Standards, Federally-approved State water quality standards, ground water protection standards, etc.)

Data shall be evaluated to ensure it is sufficient in quality (e.g., quality assurance procedures have been followed) and quantity to describe the nature, rate, and extent of contamination, to evaluate the potential threat to human health or the environment, and to support a CMS, if required. The report shall present all data in an Appendix.

COMMENT 142: DRAFT PERMIT MODULE VII.V.4.a, PAGE VII-38

A. Draft Permit Module Text

Based on the results of the RFI and the CMS Plan objectives, the Permittees shall identify all possible alternatives for removal, containment, treatment and/or other remediation of the contamination.

B. Discussion of Draft Permit Condition

The term "all" is not needed and should be deleted from this and other conditions as described below.

C. Proposed Revision to Draft Permit Condition

1. Module VII.V.4.a, Page VII-38

Based on the results of the RFI and the CMS Plan objectives, the Permittees shall identify possible alternatives for removal, containment, treatment and/or other remediation of the contamination.

2. Module VII.V.4.c, Page VII-39

The Permittees shall develop corrective measures alternatives based on corrective measures objectives, and identification and screening of preliminary alternatives. The Permittees shall rely on engineering practice to determine which of the previously identified and screened technologies appear most suitable for the site. Technologies can be combined to form the overall corrective measures alternatives. The alternatives developed shall represent a workable number of options that individually or in combination adequately address site problems and corrective action objectives. Each alternative may consist of an individual technology or a combination of technologies. The Permittees shall document the reasons for excluding technologies.

COMMENT 143: DRAFT PERMIT MODULE VII.V.4.d.1(c), PAGE VII-42 AND VII-43

A. Draft Permit Module Text

The Permittees shall assess each alternative in terms of the extent to which it mitigates short- and long-term potential exposure to any residual contamination and protects human health both during and after implementation of the corrective measures alternative. The assessment will describe the levels and characterizations of contaminants on-site, potential exposure routes, and potentially affected populations. Each alternative will be evaluated to determine the level of exposure to contaminants and the reduction over time. For management of mitigation measures, the relative reduction of impact will be determined by comparing residual levels of each alternative with existing criteria, standards, or regulations acceptable to the Secretary.

B. Discussion of Draft Permit Condition

This provision is ambiguous. Specifically, it refers to "residual" levels which are not defined. Presumably these levels are either background or some difference between background and the EPA established clean-up level. This provision should be revised to clarify the meaning of residual levels.

C. Proposed Revision to Draft Permit Condition

1. Module VII.V.4.d.1)c), Page VII-42 and VII-43

The Permittees shall assess each alternative in terms of the extent to which it mitigates short- and long-term potential exposure to any residual contamination in excess of established cleanup levels and protects human health both during and after implementation of the corrective measures alternative. The assessment will describe the levels and characterizations of contaminants on-site, potential exposure routes, and potentially affected populations. Each alternative will be evaluated to determine the level of exposure to contaminants and the reduction over time. For management of mitigation measures, the relative reduction of impact will be determined by comparing residual levels above clean up standards of each alternative with existing criteria, standards, or regulations.

COMMENT 144: DRAFT PERMIT MODULE VII TABLE 1 (#8, #9), PAGE VII-47

A. Draft Permit Module Text

TABLE 1

RFI/CMS SCHEDULE OF COMPLIANCE

REPORTING REQUIREMENTS		***DUE DATE***
1.	*Progress Reports*	*Quarterly and no later than ninety (90) calendar days after initiating each activity.*
2.	*Facility Work Plan*	*Ninety (90) calendar days after the effective date of this Permit.*
3.	*Modifications to Facility Work Plan*	*Annually.*
2.	*RFI Work Plan*	*One hundred eighty (180) calendar days after the effective date of this Permit (for the SWMUs and AOCs listed in Tables 2 and 3, respectively).*
3.	*Amended RFI Work Plan*	*Thirty (30) calendar days of the receipt of the Notice of Deficiencies.*
4.	*RFI Report and Summary*	*Sixty (60) calendar days after completion of the RFI.*
5.	*Amended RFI Report and Summary*	*Thirty (30) calendar days of the receipt of the Notice of Deficiencies.*
6.	*Notification of Newly-Identified SWMUs or potential AOCs*	*Thirty (30) calendar days after discovery of the SWMU or AOC.*
7.	*Notification of Newly-Discovered Releases*	*Verbal notification within twenty-four (24) hours, written notification fifteen (15) calendar days after discovery of the release.*
8.	*Interim Measures Plan*	*As determined by the AA.*
9.	*Amended Interim Measures Plan*	*As determined by the AA.*
10.	*CMS Plan*	*Ninety (90) calendar days after notification of the requirement to perform a CMS.*
11.	*Amended CMS Plan*	*Thirty (30) calendar days of the receipt of the Notice of Deficiencies.*
12.	*CMS Report and Summary*	*Sixty (60) calendar days after the completion of the CMS.*
13.	*Amended CMS Report and Summary*	*Thirty (30) calendar days after the receipt of the Notice of Deficiencies.*

B. Discussion of Draft Permit Condition

The Term “AA” is not defined anywhere in this module of the Draft Permit. It should be replaced with the word “Secretary” to clarify the appropriate administrative authority to make such determinations. In addition, the numbering on Table 1 is inaccurate and should be corrected.

C. Proposed Revision to Draft Permit Condition

1. Module VII, Table 1, Page VII-47

TABLE 1
RFI/CMS SCHEDULE OF COMPLIANCE

REPORTING REQUIREMENTS		***DUE DATE***
1.	*Progress Reports*	*Quarterly and no later than ninety (90) calendar days after initiating each activity.*
2.	*Facility Work Plan*	*Ninety (90) calendar days after the effective date of this Permit.*
3.	*Modifications to Facility Work Plan*	*Annually.*
4.	*RFI Work Plan*	*One hundred eighty (180) calendar days after the effective date of this Permit (for the SWMUs and AOCs listed in Tables 2 and 3, respectively).*
5.	*Amended RFI Work Plan*	*Thirty (30) calendar days of the receipt of the Notice of Deficiencies. (May be extended 30 days if requested.)*
6.	*RFI Report and Summary*	*Sixty (60) calendar days after completion of the RFI.*
7.	*Amended RFI Report and Summary*	*Thirty (30) calendar days of the receipt of the Notice of Deficiencies. (May be extended 30 days if requested.)*
8.	*Notification of Newly-Identified SWMUs or potential AOCs*	*Thirty (30) calendar days after discovery of the SWMU or AOC.*
9.	*Notification of Newly-Discovered Releases*	*Verbal notification within twenty-four (24) hours, written notification fifteen (15) calendar days after discovery of the release.*
10.	*Interim Measures Plan*	*As determined by the Secretary*
11.	*Amended Interim Measures Plan*	*As determined by the Secretary*
12.	*CMS Plan*	*Ninety (90) calendar days after notification of the requirement to perform a CMS.*
13.	*Amended CMS Plan*	*Thirty (30) calendar days of the receipt of the Notice of Deficiencies. (May be extended 30 days if requested.)*
14.	*CMS Report and Summary*	*Sixty (60) calendar days after the completion of the CMS.*
15.	*Amended CMS Report and Summary*	*Thirty (30) calendar days after the receipt of the Notice of Deficiencies. (May be extended 30 days if requested.)*

COMMENT 145: DRAFT PERMIT MODULE VII, TABLE 3, PAGE VII-49

A. Draft Permit Module Text

AOCS INCLUDED IN THE PERMIT

AOC NUMBER & (NAME)	***RATIONALE FOR INCLUSION***
Drilling Mud Pits (6 AOCs)	
001r (D-123)	***Presence of hazardous constituents not precluded, release potential to the soil medium is high.***
001u (IMC-376)	***Presence of hazardous constituents not precluded, release potential to the soil medium is high.***
001v (IMC-456)	***Presence of hazardous constituents not precluded, release potential to the soil medium is high.***
001w (IMC-457)	***Presence of hazardous constituents not precluded, release potential to the soil medium is high.***
001ac (DSP-207)	***Presence of hazardous constituents not precluded, release potential to the soil medium is high.***
001ae (IMC-377)	***Presence of hazardous constituents not precluded, release potential to the soil medium is high.***
Mine Shaft Sumps (2 AOCs)	
010b (Waste Handling Shaft Sump)	***Hazardous constituents have been released, a risk assessment has not been performed.***
010c (Exhaust Shaft Sump)	***Hazardous constituents have been released, a risk assessment has not been performed.***
TRU Mixed Waste Management Units (5 AOCs)	
013a (Waste Handling Building Unit)	***Permitted TRU mixed waste container storage unit.***

AOC NUMBER & (NAME)	***RATIONALE FOR INCLUSION***
013b (Parking Area Unit)	***Permitted TRU mixed waste container storage unit.***
013c (Underground HWDU - Panel 1)	***Permitted TRU mixed waste disposal unit.***
013d (Underground HWDU - Panel 2)	***Permitted TRU mixed waste disposal unit.***
013e (Underground HWDU - Panel 3)	***Permitted TRU mixed waste disposal unit.***

B. Discussion of Draft Permit Condition

Under the proposed Subpart S regulations, the NMED is not authorized to require corrective action at five of these TRU mixed waste management units because, in order for a unit to be potentially subject to the corrective action requirements, it must be a SWMU with waste already placed in it, not merely be designated for waste placement in the future.

Specifically, the RCRA statutory provision governing corrective action provides that a permitting agency (i.e., NMED) must require corrective action for all releases of hazardous waste or constituents from SWMUs "regardless of the time at which waste *was placed* in such unit." See 42 U.S.C. § 6924(u) (emphasis added). Similarly, this provision's implementing regulations promulgated by the EPA (and incorporated by reference in New Mexico) provide that "[the owner or operator of a facility seeking a permit" under RCRA must institute corrective action "as necessary to protect human health and the environment for all releases of hazardous waste or constituents from any solid waste management unit at the facility, regardless of the time at which waste *was placed* in such unit." See 40 CFR § 264.101(a) (emphasis added). The use of the past tense of the word "place" in both of the above-referenced provisions mandates that corrective action only be required at SWMUs where, at the time a permit is being sought, waste already has been placed.

Additionally, the definition of SWMU set out in the proposed Subpart S regulations[3] contains the past tense of relevant terms. See Proposed 40 CFR §

[3]The term "solid waste management unit," or "SWMU," is not defined in any statute or regulations which have been promulgated but *is* defined in the proposed Subpart S regulations. In addition, an identical definition of "SWMU" appears in the Draft Permit.

264.501. In particular, under the proposed Subpart S regulations, "SWMU" is defined, in relevant part, as "any discernible unit at which solid wastes *have been placed* at any time [including] any area at a facility at which solid wastes *have been* routinely and systematically *released*." Id. (emphasis added). See also the Draft Permit, Section VII.A (same definition of SWMU); Technical Support Document, at 3.1 (same definition of SWMU). Thus, since the proposed Subpart S definition of "SWMU" (as well as the Draft Permit and Technical Support Document definitions) contemplates past placement of waste, areas where waste has never been placed — such as the above-referenced "AOCs" to be utilized for future storage, handling or disposal of TRU mixed waste at the WIPP--are not SWMUs and thus should not be subjected to the corrective action/remedial investigation requirements.

In addition to the above-referenced statutory and regulatory provisions which govern the applicability of the SWMU corrective action/remedial investigations, the NMED's own documents related to the WIPP provide for corrective action/remedial investigation applicability only where waste has already been placed. Specifically, the Draft Permit and the Technical Support Document define the term "area of concern," or "AOC," as "any discernable unit or area which, in the opinion of the [Secretary], may *have received* solid or hazardous waste or waste containing hazardous constituents at any time." Thus, because the above-referenced areas to be utilized for future storage, handling or disposal of TRU mixed waste have not yet received waste, these areas do not fall within the NMED's own definition of "AOC," and the NMED should not require corrective action/remedial investigation with respect to these areas.

Moreover, it is not theoretically possible for the Permittees to perform a remedial investigation of the above-referenced areas to be utilized for future storage, handling or disposal of TRU mixed waste as these areas do not yet contain any hazardous waste or hazardous constituents, and, pursuant to the proposed Subpart S regulations, the purpose of a remedial investigation is to investigate releases of hazardous waste or hazardous constituents. See Proposed 40 CFR §§ 264.510 and 264.511.

Accordingly, all references to the TRU mixed waste management units as areas of concern, or AOCs, in the Draft Permit and the technical support document (e.g., AOC 013a, 013b, 013c, 013d, and 013e) should be deleted.

C. Proposed Revision to Draft Permit Condition

1. Module VII, Table 3, Page VII-47

AOCS INCLUDED IN THE PERMIT

AOC NUMBER & (NAME)	***RATIONALE FOR INCLUSION***
Drilling Mud Pits (6 AOCs)	
001r (D-123)	*Presence of hazardous constituents not precluded, release potential to the soil medium is high.*
001u (IMC-376)	*Presence of hazardous constituents not precluded, release potential to the soil medium is high.*
001v (IMC-456)	*Presence of hazardous constituents not precluded, release potential to the soil medium is high.*
001w (IMC-457)	*Presence of hazardous constituents not precluded, release potential to the soil medium is high.*
001ac (DSP-207)	*Presence of hazardous constituents not precluded, release potential to the soil medium is high.*
001ae (IMC-377)	*Presence of hazardous constituents not precluded, release potential to the soil medium is high.*
Mine Shaft Sumps (2 AOCs)	
010b (Waste Handling Shaft Sump)	*Hazardous constituents have been released, a risk assessment has not been performed.*
010c (Exhaust Shaft Sump)	*Hazardous constituents have been released, a risk assessment has not been performed.*

2.7.2 Comments on Attachment TSD

COMMENT 146: DRAFT PERMIT ATTACHMENT TSD--GENERAL

A. Discussion

There is no need for the Permittees to resample WIPP SWMUs. The NMED and EPA Region VI have already approved the use of TCLP data to evaluate releases from WIPP SWMUs. In particular, as previously described, the Permittees entered into negotiations with the NMED and EPA Region VI for the development of a Voluntary Release Assessment/Corrective Action program beginning in 1995, as allowed by applicable requirements. During this time, the Permittees provided both agencies with copies of a proposed RFI Work Plan and an RFI Sampling Plan that included a Data Quality Objective Plan. Further, the Permittees entered into discussions with both agencies to justify the use of the Toxic Characteristic Leaching Procedure (TCLP) analytical method to characterize potential vertical and horizontal release from SWMUs evaluated during Phase 1 RFI process. The TCLP method was selected to better evaluate the leaching potential of hazardous constituents from SWMUs sites. Throughout the period for review and request for verbal and/or written comments, neither agency determined that TCLP data could or should not be used to characterize potential releases. Indeed, both agencies verbally approved the WIPP SWMU Sampling Plan, and the Permittees completed sampling at most sites using TCLP analytical criteria.

The Draft Permit now proposes that TCLP data may not be used to evaluate releases from SWMUs at the WIPP. In lieu of spending several hundred thousand dollars of taxpayer money to re-sample each of these sites, the TCLP data can still be used to evaluate potential releases from WIPP SWMUs. Specifically, the TCLP analytical data from background samples locations collected both up and down gradient of SWMU locations and provided in the Voluntary Release Assessment reports demonstrate that background constituent concentrations inside the potential contaminate areas, are, in most cases, the same as background concentrations at locations where no release of constituents has occurred. Moreover, calculations should be completed using the appropriate Industrial (not Residential) constituent screening values. The use of a residential scenario is not representative of future reality at the WIPP.

Accordingly, the Permittees should be allowed to use TCLP data, analyzed with industrial screening values, to evaluate releases at WIPP SWMUs.

B. Proposed Revision to Draft Permit Condition

The NMED should rerun its analysis using Industrial Screening Values and the more recent data and analysis submitted by the Permittees.

COMMENT 147: DRAFT PERMIT ATTACHMENT TSD--GENERAL COMMENT--PETROLEUM EXPLORATION-RELATED SWMUS

A. Discussion

With respect to "Badger Unit" (SWMU 001o) and "Cotton Baby" (SWMU 001p), the NMED may be precluded from requiring corrective action based on an exclusion applicable to certain petroleum exploration activities. Specifically, pursuant to 40 CFR Section 261.4(b)(5), which has been incorporated by reference into New Mexico law (20 NMAC § 4.1.500), "[d]rilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil, natural gas or geothermal energy" are exempt from the definition of "hazardous waste," although such materials *do* constitute "solid waste." 20 NMAC 4.1.500 § 261.4(b)(5). Therefore, waste material located in WIPP SWMUs which is associated with such petroleum-exploration activities — i.e., waste located in Badger Unit and Cotton Baby SWMUs — is exempt from the definition of "hazardous waste."

Since the corrective action requirements apply to "all releases of hazardous waste *or constituents*" from SWMUs, these petroleum exploration-related SWMUs are exempt from SWMU corrective action requirements unless the corrective action requirements concern "hazardous constituents." See 20 NMAC 4.1.500 § 264.101(a) (emphasis added). The section of the Draft Permit dealing with corrective action does not specify the substances for which the NMED is requesting corrective action in Badger Unit or Cotton Baby. See Draft Permit, Module VII, VII.M, VII.U. Moreover, the technical support document which the NMED issued in connection with the Draft Permit *does* not list any specific substances for which the NMED is requesting corrective action in Badger Unit or Cotton Baby, although it does list the specific substances for which it is requesting corrective action with respect to other, non-petroleum exploration-related SWMUs. See Technical Support Document, at Table 2. Thus, because the NMED has not specified the substances for which it is requesting corrective action for Badger Unit or Cotton Baby, it is not possible to definitively determine whether such substances would constitute "hazardous constituents" for which the NMED is authorized to impose corrective action requirements. Accordingly, the NMED must expressly delineate the substances for which it is requesting corrective action in connection with Badger Unit and Cotton Baby. If these substances are not "hazardous constituents," the NMED should not require corrective action with respect to these petroleum exploration-related SWMUs.

B. Proposed Revision to Draft Permit Condition

The substances for which the NMED is requesting corrective action in connection with Badger Unit and Cotton Baby should be specified in the TSD (Table 2) and, if they are not hazardous constituents, these SWMUs should be deleted from corrective action requirements.

COMMENT 148: DRAFT PERMIT ATTACHMENT TSD--GENERAL COMMENT--HAZARD INDICES CALCULATIONS

A. Discussion

The NMED's HI calculations are too conservative. The HI calculations do not subtract out background levels. Moreover, they are set up so that the more constituents that are analyzed and not detected, the higher the calculated HIs, thus forcing corrective action investigations. Accordingly, the HI calculations should be reformulated to exclude background levels and non-detects.

B. Proposed Revision to Draft Permit Condition

Recalculate HIs to exclude background levels and non-detects.

COMMENT 149: DRAFT PERMIT ATTACHMENT TSD 4-4, PAGE TSD-18

A. Draft Permit TSD Text

Contaminants of Potential Ecological Concern. Contaminants of potential concern for ecological receptors were determined by comparing the maximum constituent concentrations from soil depth intervals of 12-24, 36-48, and 60-72 inches below ground surface (bgs) for each constituent and SWMU with respective upgradient concentrations. No samples were taken and analyzed from 0-12 inches bgs soil depth interval. As a result of this comparison with upgradient constituent soil concentrations, the contaminants of potential ecological concern (COPEC) are: arsenic, barium, chromium, lead, nickel, PCBs, and thallium. Although thallium and PCBs were detected at levels below their respective detection limits, both thallium and PCBs were selected as COPECs due to a very high detection limits employed (i.e., 20 mg/kg for thallium and 100 mg/kg for PCBs).

B. Discussion of Draft Permit Condition

The Draft Permit should not require SWMU corrective action/remedial investigations with respect to thallium because there is no justification for assuming the presence of thallium and because the residential standards proposed are unrealistic and implausible. Although requesting thallium-based corrective action/remedial investigation neither the technical support document nor the Draft Permit sets forth any underlying basis for proposing that thallium (as opposed to any other substance) may be an issue at WIPP SWMU(s). A March 27, 1991 EPA memorandum regarding applicability of the proposed Subpart S regulations states that "because the specific requirements for these corrective actions are not currently regulatory requirements, they must generally be imposed in the permit, and justified on a case-by-case basis, in order to make them mandatory for the Permittee." Thus, the Draft Permit should not require SWMU corrective action/remedial investigation with respect to thallium because this proposal has not been "justified on a case-by-case basis." Moreover, the Draft Permit improperly applies a residential exposure level to determine risks location levels at SWMU TSD-6 which result in overly conservative assumptions. The Draft Permit proposes corrective action/remedial investigation at several SWMUs based on the fact that previous DOE and WID testing for thallium did not meet residential standards. There is no conceivable way in which the WIPP facility would be utilized for residential purposes and the Draft Permit fails to provide any realistic basis for applying residential standards to the WIPP. EPA's preamble to the Subpart S proposed rules specifically states that "EPA believes that cleanups must achieve a level appropriate for <u>all actual and reasonably expected uses</u>" and "investigations must be focused <u>on plausible concerns</u>..."[55 Fed Reg 30803](emphasis added). The Draft Permit should focus corrective action on realistic events. Because it is not realistic to assume a residential use, industrial

standards should be applied to WIPP. Accordingly, all SWMU corrective action requirements with respect to thallium should be deleted from the Draft Permit.

C. Proposed Revision to Draft Permit Condition

1. Attachment TSD, Page TSD-17

Contaminants of Potential Ecological Concern. *Contaminants of potential concern for ecological receptors were determined by comparing the maximum constituent concentrations from soil depth intervals of 12-24, 36-48, and 60-72 inches below ground surface (**bgs**) for each constituent and SWMU with respective upgradient concentrations. No samples were taken and analyzed from 0-12 inches bgs soil depth interval. As a result of this comparison with upgradient constituent soil concentrations, the contaminants of potential ecological concern (**COPEC**) are: arsenic, barium, chromium, lead, nickel, and PCBs.*

COMMENT 150: DRAFT PERMIT ATTACHMENT TSD 4-4, PAGE 18

A. Draft Permit Attachment Text

Only one listed species (threatened state listed), the sand dune lizard was observed regularly near WIPP. Also, habitat for the bald eagle (a federally-listed endangered species) is available in the WIPP evaluation area. Key receptors selected are common and year-long residents. Master lists of wildlife and plant species include species that, while not physically observed, use habitats that exist at WIPP and could possibly be present at the facility.

Birds and mammal representing several trophic levels were selected as the key receptors for the WIPP area. The key receptors selected are: generic plants, generic invertebrates, deer mouse (Peromyscus maniculatus), kit fox (Vulpes macrotis), red-tailed hawk (Buteo jamaicensis), bobwhite quail (Colinus virginianus), sand dune lizard (Sceloporus arenicolus), roadrunner (Geococcyx californianus), western meadowlark (Sturnella neglecta), cave myotis (Myotis velifer), and cattle (Bos bovis).

B. Discussion of Draft Permit Condition

Although the sand dune lizard, kit fox, and bald eagle are listed in the Draft Permit as "key ecological receptors", they were not identified within the WIPP Land Withdrawal Area (WLWA) during the 1996 Threatened and Endangered (T&E) species survey. Accordingly the Draft Permit's reference of those species as key ecological receptors within the WLWA for release assessment purposes should be deleted. Moreover, although the western meadowlark is found on the WLWA, it is the eastern meadowlark that, is much more prevalent on the WLWA. As a result, the reference to Western Meadowlark should be change to Eastern Meadowlark.

C. Proposed Revision to Draft Permit Condition

Make the following changes to the analyses in the TSD regarding the receptors of interest.

1. TSD-4.4, Page TSD-18

Habitat for the bald eagle (a federally-listed endangered species) is available in the WIPP evaluation area. However, the bald eagle is not considered to be a key receptor. Key receptors selected are common and year-long residents. Master lists of wildlife and plant species include species that, while not physically observed, use habitats that exist at the WIPP and could possibly be present at the facility.

Birds and mammal representing several trophic levels were selected as the key receptors for the WIPP area. The key receptors selected are: generic plants, generic invertebrates, deer mouse (Peromyscus maniculatus), red-tailed hawk (Buteo jamaicensis), bobwhite quail (Colinus virginianus), roadrunner (Geococcyx californianus), eastern meadowlark (Sturnella neglecta), cave myotis (Myotis velifer), and cattle (Bos bovis).

2. TSD-10.7.3, Page TSD-67

Table 16D of this TSD depicts the risk to ecological receptors representing different trophic levels and feeding guilds through ingestion of food and soil. The calculated HIs for the key receptors (ranging from 0.1 for plants to about 64,000 for Cave myotis), based on chemical- and receptor-specific ESSLs, exceed unity for most of the receptors evaluated, except for Red-tailed hawk feeding on quail and roadrunner and cattle.

3. TSD-Table 5D, Page TSD-105

Remove the kit fox and dune lizard entries from this table.

4. TSD-Table 6D, Page TSD-113

Remove the kit fox and dune lizard entries from this table.

5. TSD-Table 7D, Page TSD-121

Remove the kit fox and dune lizard entries from this table.

6. TSD-Table 8D, Page TSD-129

Remove the kit fox and dune lizard entries from this table.

7. TSD-Table 9D, Page TSD-137

Remove the kit fox and dune lizard entries from this table.

8. TSD-Table 10D, Page TSD-145

Remove the kit fox and dune lizard entries from this table.

9. TSD-Table 11D, Page TSD-153

Remove the kit fox and dune lizard entries from this table.

10. TSD-Table 12D, Page TSD-162

Remove the kit fox and dune lizard entries from this table.

11. TSD-Table 13D, Page TSD-169

Remove the kit fox and dune lizard entries from this table.

12. TSD-Table14D, Page TSD-178

Remove the kit fox and dune lizard entries from this table.

13. TSD-Table 15D, Page TSD-194

Remove the kit fox and dune lizard entries from this table.

14. TSD-Table 16D, Page TSD-198

Remove the kit fox and dune lizard entries from this table.

3.0 MISCELLANEOUS COMMENTS

In addition to the comments in the preceding sections, the DOE is submitting editorial and clarification comments in the form of a Redline/Strikeout (RLS) version of the Draft Permit. The attached RLS version includes the following:

- Changes recommended in Section 2
- Editorial comments from throughout the Draft Permit (except for the Fact Sheet, Legal Notice, and Certificate)
- Comments to clarify, modify, or supplement the text. For the most part, these remove ambiguous language that could lead to confusion with regard to implementation of the final permit
- Changes included in the May 28, 1998 comments submitted by the DOE to the NMED