

## **SUMMARY OF PROPOSED CHANGES**

In order to assist reviewers, the Permittees are providing the following guides:

- Non-WAP Reviewers Guide Summary of Changes—provides a summary of the changes made to all sections of the Permit with the exception of the Waste Analysis Plan (WAP) and incorporated into the Renewal Application.
- WAP Reviewers Guide Summary of Changes—provides a summary of the changes made to Permit Attachments B, B1, B2, B3, B4, B5, B6, and B7 and incorporated into the Renewal Application.
- Guide to Changes to Renewal Application Chapter B, Section B-3—provides a roadmap of the changes made to Section B-3. This roadmap was requested by stakeholders to facilitate their review of the changes to this section.

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## Non-WAP Reviewer’s Guide Summary of Changes

The following table provides a broad summary of the proposed changes in WIPP Hazardous Waste Facility Permit Renewal Application. Refer to the Abbreviations and Acronyms list for acronyms used in this table.

Section	Change	Discussion/Justification
<b>PART A</b>		
General	Generally provided updated information	Make application current.
<b>CHAPTER A</b>		
General	Generally provided updated information and made editorial corrections	Make application current. Enhance the readability of the Application.
<b>CHAPTER B</b>		
General	See the “WAP Reviewer’s Guide Summary of Changes”	
<b>APPENDIX B1</b>		
General	See the “WAP Reviewer’s Guide Summary of Changes”	
<b>APPENDIX B2</b>		
General	See the “WAP Reviewer’s Guide Summary of Changes”	
<b>APPENDIX B3</b>		
General	See the “WAP Reviewer’s Guide Summary of Changes”	
<b>APPENDIX B4</b>		
General	See the “WAP Reviewer’s Guide Summary of Changes”	
<b>APPENDIX B5</b>		
General	See the “WAP Reviewer’s Guide Summary of Changes”	

Section	Change	Discussion/Justification
<b>APPENDIX B6</b>		
General	See the “WAP Reviewer’s Guide Summary of Changes”	
General	Generally changed tables to reflect revised requirements in the Waste Analysis Plan	
<b>APPENDIX B7</b>		
General	See the “WAP Reviewer’s Guide Summary of Changes”	
<b>CHAPTER C</b>		
General	Changes are generally editorial in nature.	Enhance the readability of the Application. One common editorial change is to change references to the “Permit” to references to the “Renewal Application”.
<b>CHAPTER D</b>		
Section D-1 Inspection Schedule	Remove requirement to use controlled document locations and to have the procedures in the Operating Record. Instead, the procedures will be maintained on file at the facility.	WIPP no longer uses site-wide controlled document locations. In lieu of this, easy access to controlled documents is via the internal network. This method assures that users have access to the most recent version of a document—a requirement of Conduct of Operations.  The regulations do not require the procedures to be in the Operating Record. It has to be on file at the facility.
Section D-1 Inspection Schedule	Allow electronic inspection records	The Permittees are seeking to implement an electronic alternative to hard copies of the operating record. This greatly enhances accessibility to the operating record, requires less space for storage, and assures original copies are maintained at a facility that meets the DOE records retention requirements. Hard copies will still be available in the archives and electronic copies can be printed easily and are unalterable.

Section	Change	Discussion/Justification
Section D-1 Inspection Schedule	Eliminate specific reference to the Safety Analysis Report.	The reference is to a historical evaluation of equipment and systems that have been approved for use at the WIPP as part of the Permit. The context now is that the evaluation was performed in the past and was systematic.
Section D-1a General Inspection Requirements and Section D-1a(1) Types of Problems	Clarify that what is inspected for deterioration is the concrete floor—not the coating	The floor provides secondary containment and is the critical item to inspect. The text implies that inspecting the coating only is sufficient. Deterioration in the floor will manifest itself as cracks in the coating, however, the target of inspection must clearly be the concrete floors.
Gen.	Numerous additional comments that are of editorial or clarifying comments	Make the renewal Application more readable and internally consistent.
Table D-1 Inspection Schedule/Procedures and Table D-1a RH TRU Mixed Waste Inspection Schedule/Procedures	Clarify use of the term “leaks”, “spills” and others	The expression “leaks/spills” are used together in many instances where only leaks or spills are relevant. In other instances the term is referring to the condition of equipment fluids and not containers of waste. In this latter case, the terms are removed.
<b>APPENDIX D1</b>		
Gen.	This is removed in its entirety	This information is redundant to the information contained in Table D-1 and is not longer needed in the Permit.
<b>CHAPTER E</b>		
Gen.	Changes are generally editorial in nature.	Enhance the readability of the Application. One of the editorial changes is to remove reference to the Permit Modules which are prepared by the NMED as part of a Permit and therefore are not part of the Renewal Application. Where information from a Module is needed in the renewal application, it is inserted into the appropriate Chapter text.

Section	Change	Discussion/Justification
<b>CHAPTER F</b>		
Gen.	Editorial changes to correct and clarify the text.	Enhance the readability of the Application.
F-1 General Information	Delete a sentence that is unclear.	This sentence is unclear and its deletion does not change the implementation of the contingency Plan at the WIPP facility.
Section F-1b Waste Description	Change generator/storage site to TRU waste site.	See the “WAP Reviewer’s Guide Summary of Changes” .
Section F-1f Off-Normal Events	Remove the requirement to stop shipments within 72 hours of declaring an off-normal event.	This requirement was included in the Permit originally to allow the Permittees the flexibility to evaluate off normal events without having to turn shipment around that were enroute. This flexibility was needed in order to manage the very limited storage capacity at the WIPP at the time. Now that the storage capacity is greatly expanded, the requirement is no longer needed and, in some instances, may limit flexibility in decision making. Further detail on making an evaluation of stopping shipments is provided in Renewal Application M1.
Section F-2 Response Personnel <ul style="list-style-type: none"><li>• First Line Initial Response Team (FLIRT)</li><li>• Mine Rescue Team (MRT)</li></ul>	Remove reference to the “Supplemental Emergency Response Program”	The Supplemental Emergency Response Program is not required by the Contingency Plan or RCRA.
Section F-4a(1) Initial Emergency Response and Alerting the RCRA Emergency Coordinator	Delete reference to 27 agency response plan	This participation is not required by the Contingency Plan or RCRA. Resources are available whether or not the participation is in the Permit.
Section F-4d(8) Roof Fall	Remove descriptive information that is no longer relevant	Inspections are performed in accordance with standard operating procedures and not in the uncontrolled manner implied by the text.

Section	Change	Discussion/Justification
Section F-4d(10) Emergency Termination Procedures	Remove unnecessary condition for NMED approval	The sampling plan is prepared in accordance with SW-846 and does not need NMED approval. Such approval may only slow implementation.
Section F-4e Prevention of Recurrence or Spread of Fires, Explosions, or Releases	Eliminate the requirement to perform a Root Cause Analysis	This requirement is driven by DOE orders and not by RCRA. The form, content, distribution, and schedule are driven by DOE policy.
Section F-9 Location of the Contingency Plan and Planned Revision	Remove requirement to use controlled document locations. Instead, the Contingency Plan will be maintained on file at the facility.	WIPP no longer uses site-wide controlled document locations. In lieu of this, easy access to controlled documents is via the internal network. This method assures that users have access to the most recent version of a document—a requirement of Conduct of Operations.  The regulations do not require the Contingency Plan to be in the Operating Record. It has to be on file at the facility.
<b>CHAPTER G</b>		
Gen.	Editorial changes to correct and clarify the text.	Enhance the readability of the Application.
<b>CHAPTER H</b>		
Section H-1 Outline of the Training Program	Remove the Figure and reference to the Human Resources Department	It is not a requirement of RCRA to place organizational charts in Permits with regard to training. This chart is subject to change and I best managed separate from the Permit. Deleting it does not affect the effectiveness of training at the WIPP facility.
Gen.	Editorial changes to correct and clarify the text.	Enhance the readability of the Application.

Section	Change	Discussion/Justification
<b>APPENDIX H1</b>		
Mine Rescue Team Member  First Line Initial Response Team member	Replace “SERP” with “Contingency Plan”	The Contingency Plan is the appropriate reference here.
Gen.	Editorial changes to correct and clarify the text.	Enhance the readability of the Application.
Confirmation Personnel	Eliminated Permittees Management Representative	Improved the independent technical review requirements making this additional review unnecessary.
<b>APPENDIX H2</b>		
Confirmation Radiography Operator (Level 1)  Confirmation Radiography (Level 2)  Confirmation Visual Examination (Level 1)  Confirmation Visual Examination (Level 2)	Changes to the training for Confirmation personnel	Clarify the training requirements for Confirmation personnel.
Gen.	Editorial changes to correct and clarify the text.	Enhance the readability of the Application.
<b>CHAPTER I</b>		
Gen.	Editorial changes to correct and clarify the text.	Enhance the readability of the Application.
Gen.	Delete historical information and replace with current information	Enhance the accuracy of the Application.
Gen.	Add Panel 8 as a disposal unit	Increase disposal capacity for next 10 years.
Gen.	Provide a pointer to the updated Performance Demonstration	The Performance Demonstration that addresses the efficacy of the proposed closure is included in Addendum N1 and is referenced in the Closure Plan.

Section	Change	Discussion/Justification
<b>APPENDIX I1</b>		
Gen.	Editorial changes to correct and clarify the text.	Enhance the readability of the Application.
<b>APPENDIX I1G</b>		
Gen.	Editorial changes to correct and clarify the text.	Enhance the readability of the Application.
<b>APPENDIX I1H</b>		
Gen.	Editorial changes to correct and clarify the text.	Enhance the readability of the Application.
<b>APPENDIX I2</b>		
Gen.	Editorial changes to correct and clarify the text.	Enhance the readability of the Application.
<b>APPENDIX I2A</b>		
Gen.	Editorial changes to correct and clarify the text.	Enhance the readability of the Application.
<b>APPENDIX I2B</b>		
Gen.	Editorial changes to correct and clarify the text.	Enhance the readability of the Application.
<b>APPENDIX I2E</b>		
Gen.	Editorial changes to correct and clarify the text.	Enhance the readability of the Application.
<b>APPENDIX I3</b>		
Gen.	Editorial changes to correct and clarify the text.	Enhance the readability of the Application.
<b>CHAPTER J</b>		
Gen.	Editorial changes to correct and clarify the text.	Enhance the readability of the Application.
<b>APPENDIX J1</b>		
Gen.	Editorial changes to correct and clarify the text.	Enhance the readability of the Application.

Section	Change	Discussion/Justification
<b>CHAPTER L</b>		
Gen.	Changed reference to original Part B Permit Application to Addendum L1	Addendum L1 contains updated Site Characterization information including groundwater information. It is incorporated by reference.
Gen.	Editorial changes to correct and clarify the text.	Enhance the readability of the Application.
Gen.	Move procedures from the Operating Record to the Facility Files.	RCRA does not require that procedures be maintained in the Operating Record, however, they do need to be on file at the facility. These numerous changes commit to maintain current versions of procedures in facility files and not the operating record.
Gen.	Update historical text related to background sampling	The original permit contained conditions regarding background measurements. These have been completed and so the text has been updated or deleted in numerous locations.
Gen.	Update organization references	Where possible, references to specific organizations and individuals have been changed to the "Permittees" in order to reduce the administrative burden of changing the permit when an organization name changes.
L-1 Introduction	Paragraphs rearranged	Introductory text was moved to enhance the readability for the Renewal Application.
L-1a(2)(iii) The Rustler	Delete discussion of Culebra	Information is no longer current. Refer to Addendum L1 for most recent interpretations of Culebra hydrology.
L-1a(2)(iii) The Rustler	Replace discussion of hydrochemical facies with current information	Information is no longer current. Current information follows the deletion.
L-1a(2)(iii) The Rustler	Delete old text, insert updated information.	Information is no longer current. Current information follows the deletion.
L-3b <del>Current WIPP</del> <del>Detection Monitoring</del> <del>Well Network DMP</del>	Delete information regarding potentiometric surfaces that is historical in nature.	Potentiometric surfaces are discussed in Addendum L1 and interpreted using current data.

Section	Change	Discussion/Justification
L-1a(2)(iii) The Rustler	Delete information regarding use of water level data that is unrelated to RCRA	Information is descriptive and is not needed to implement the water level monitoring program under the permit.
L-4c(1) Groundwater Surface Elevation Monitoring Methodology	Remove reference to the Magenta	The Magenta water level is not of interest to the Detection Monitoring Program. It is not part of the compliance determination of flow rate and direction.
L-4c(1) Groundwater Surface Elevation Monitoring Methodology	Delete the equation	The equation is not correct without additional information. The statement that follows provides enough information to make the correction to freshwater heads.
L-4c(3) Laboratory Analysis	Clarify validation text	The current text involves the use of specific processes in procedures that apply only to procured services. The text has been edited to broaden the validation requirement to any data, whether from a contract laboratory or from an in house laboratory.
Fig L-7 <u>Groundwater Level Surveillance Wells</u> <del>Total Dissolved Solids Distribution in the Culebra</del>	Figure deleted	The distribution of dissolved solids is discussed in Addendum L1 and updated information is provided.
Figs L-8 WQSP Monitor Well Locations Figure L-9 As-Built Configuration of Well WQSP-1	Figure updated	Major updates to the location of wells used in the program are included to reflect the new wells added and the old wells that have been plugged.
Fig L-18 Groundwater Surface Elevation Monitoring Locations	Figure deleted	The information is included on the updated Figure L-8 and not repeated here.

Section	Change	Discussion/Justification
<b>CHAPTER M</b>		
Gen.	Changes are generally editorial in nature.	Enhance the readability of the Application. One of the editorial changes is to remove reference to the Permit Modules which are prepared by the NMED as part of a Permit and therefore are not part of the Renewal Application. Where information from a Module is needed in the renewal application, it is inserted into the appropriate Chapter text.
<b>APPENDIX M1</b>		
Gen.	Editorial changes to correct and clarify the text.	Enhance the readability of the Application.
Gen.	Remove references to design documents	Since this is a renewal application, reference to original design documents is no longer needed. However, original drawings that have undergone significant change have been included in the Renewal Application under the Maps and Drawings Tab.
Section M1-1c(1) Waste Handling Building Container Storage Unit	Deleted text	This text regarding the video recording capability in the RH Complex is dated and the due dates have passed. Therefore the text is no longer needed.
Section M1-1d Container Management Practices and M1-1e(2) Parking Area Unit	Remove the requirement to stop shipments within 72 hours of declaring an off-normal event.	This requirement was included in the Permit originally to allow the Permittees the flexibility to evaluate off normal events without having to turn shipment around that were enroute. This flexibility was needed in order to manage the very limited storage capacity at the WIPP at the time. Now that the storage capacity is greatly expanded, the requirement is no longer needed and, in some instances, may limit flexibility in decision making. Considerations for making an evaluation of stopping shipments are provided.

Section	Change	Discussion/Justification
M1-1d(2) <del>CH TRU</del> <u>Contact-Handled</u> <u>Transuranic</u> Mixed Waste Handling Footnote 5	Deleted footnote	The discussion of the Overpack and Repair Room is no longer needed since the area involved is not a permitted waste management area in the Renewal Application.
Table M1-1 RH TRU Mixed Waste Handling Equipment Capacities	Added table	Added the Waste Handling Building storage limits and capacities from Module III of the Permit.
Table M1-2 Basic Design Requirements, Principal Codes, and Standards	Updated table	The designation of design class has changed for the WIPP facility so the table was updated to reflect the new classification. This only impacts future new construction.
Table M1-5 Parking Area Unit Storage Capacities	Added table	Added the Parking Area Storage Unit storage limits and capacities from Module III of the Permit.
<b>APPENDIX M2</b>		
Gen.	Editorial changes to correct and clarify the text.	Enhance the readability of the Application.
Gen.	Add Panel 8 as a disposal unit	Increase disposal capacity for next 10 years.
Gen.	Remove references to design information	Since this is a renewal application, reference to original design information is no longer needed. However, where appropriate, reference to Addendum L1 which discusses the Geology is included.
M2-2a(1) CH TRU Mixed Waste Handling Equipment	Add text	Add text and a Figure to show backfill racks in the disposal rooms.
Section M2-2a(3) Subsurface Structures	Delete text	This text is dated text that was included prior to the final construction of the third ventilation fan. It is no longer needed.

Section	Change	Discussion/Justification
Section M2-2b Geologic Repository Process Description	Add text regarding returning waste to the surface	It is necessary to allow waste to remain on the transporter between shifts in the event immediate emplacement is not possible. Based on experience, 72 hours is adequate.
M2-5b(2)(b) System Experience	Deleted text	This text referred to the experience with roof support in Panel 1. This was needed prior to using Panel 1 but is no longer important. The experience from Panel 1 is reflected throughout the ground support program.
M2-5b(3) Volatile Organic Compound Monitoring	Added section	This adds the Hydrogen/Methane monitoring program that is described in Permit Module IV.
Table M2-1 Disposal Capacities For Underground Hazardous Waste Disposal Units	Added table	Added the disposal limits and capacities from Module IV of the Permit.
Figure M2-5 <del>Typical</del> Potential MgO Emplacement Configurations	Added figure	Added a photograph of backfill on a rack in a disposal room.
<b>APPENDIX M3</b>		
	No changes in this drawing	
<b>CHAPTER N</b>		
Gen.	Editorial changes to correct and clarify the text.	Enhance the readability of the Application.
Gen.	Remove historical information	Since this is a renewal application, reference to original design information is no longer needed and it has been removed.
Gen.	Add Conditions from Module IV	Several tables and response actions in Module IV are added to the Renewal Application.

Section	Change	Discussion/Justification
N-3d(2) Sampling Schedule for Disposal Room VOC Monitoring	Add text	Adding the action levels for VOC monitoring and the associated responses.
N-3e(1) Data Evaluation and Reporting for Repository VOC Monitoring	Add text	Adding the action levels for VOC monitoring and the associated responses.
Table N-1 VOC Concentrations of Concern	Added Table	Added table with VOC Concentrations of Concern.
Table N-2 VOC Room-Based Limits	Added Table	Added table with Room Based Limits.
Table N-3 Action Level For Disposal Room Monitoring	Added Table	Added table with Room Based Action Levels.
<b>APPENDIX N1</b>		
Gen.	Editorial changes to correct and clarify the text.	Enhance the readability of the Application.
N1-21 Table N1-1	Added Table	Added table with Action Levels.
<b>CHAPTER P</b>		
Gen.	Editorial changes to correct and clarify the text.	Enhance the readability of the Application.
Gen.	Move procedures from the Operating Record to the Facility Files.	RCRA does not require that procedures be maintained in the Operating Record; however, they do need to be on file at the facility. These numerous changes commit to maintain current versions of procedures in facility files and not the operating record.

Section	Change	Discussion/Justification
Procedure WP 02-RC.01	Remove procedure	Procedure WP 02 RC.04 is no longer used. Technical training tracks training requirements in accordance with the Permit.
<b>CHAPTER Q</b>		
Gen	This is a new section being added to the Permit. It describes the method used to monitor underground ventilation for the purposes of determining compliance with the VOC environmental performance standards in Renewal Application Chapter N.	Adding this is a requirement of the current Permit.

## WAP REVIEWER'S GUIDE SUMMARY OF CHANGES

The following table provides a broad summary of the proposed changes in the WIPP Hazardous Waste Facility Permit Renewal Application Waste Analysis Plan. Refer to the Abbreviations and Acronyms list for acronyms used in this table.

Item #	Description of Change	Affected Sections
1.	Made the following changes throughout the WAP to facilitate implementation, simplify future maintenance of the document, and to minimize the potential for conflicting language:  Clarifications  Deleted redundant text where possible  Technical edits and corrections including updating table of contents  Revised Table numbers to correspond with the order that they appear in the text  Updated references where required and deleted some references that are outdated or not pertinent to the text.	B-B7
2.	Changed "Generator/Storage Site (Site)" to "U. S. Department of Energy (DOE) TRU waste site" or "DOE contract TRU waste site (TRU waste site)" where applicable (B-0 and B – B7 where applicable)	B-0 B - B7 where applicable
3.	Changed "Generator/Storage Site" to "Certified Characterization Program" (B-0 and B – B7 where applicable)	B-0 B – B7 where applicable
4.	In B-0 delineated CCP and AMWTP as the only certified characterization programs.	B-0
5.	Removed distinction between newly generated waste and retrievably stored waste characterization requirements throughout the WAP and applicable tables. This primarily affected sections B-0, B-1a, B-3, B1-1a(1), B2-1a, and B4-2b.	B-0, B-1a, B-3, B1-1a(1), B-2, B2-1a, B4-2b  B – B7
6.	Added text in B-0 and B7 indicating that waste confirmation will not be performed when a Scenario 1 or Scenario 2 AKSD has been approved for a waste stream.	B-0, B7
7.	In B-0a, Nonhalogenated Volatile Organic Compounds added "(EPA hazardous waste numbers F003 through F005)" to delineate the EPA HWNs that apply to "most prevalent nonhalogenated VOCs."	B-0a

Item #	Description of Change	Affected Sections
8.	In B-0a, Nonhalogenated Volatile Organic Compounds and Halogenated Volatile Organic Compounds, deleted “that may be managed ...during the Disposal Phase” and “Radiolysis may also generate halogenated volatile organic compounds.”	
9.	In B-0b deleted footnote defining “auditable record.”	B-0b
10.	Revised bullet 5 in B-0b to require estimation of material parameter weights on a waste stream basis from Acceptable Knowledge information only when a Scenario 1 or 2 AKSD is being requested.	B-0b
11.	In B-0b added footnote related to email notification list for AKSD submittals to the NMED	B-0b
12.	Clarified AKSD Text in B-0b to address the situation where an AKSD request is determined to be inadequate by the NMED and the Permittees either do not seek dispute resolution or are unsuccessful in the dispute resolution process.	B-0b
13.	Revised language in B-0c requiring the WSPF and CIS be transmitted to the Permittees, reviewed for completeness, and screened for acceptance “prior to loading...” and revised language in B-0c, B-1d and B-5a requiring the WSPF and CIS for the waste stream to be transmitted to NMED “prior to shipment” to be “prior to waste receipt at the WIPP.”	B-0c, B-1d, B-5a
14.	In B-0c and B-1d, “Changed Waste Stream Characterization Package” to “waste stream and changed the section reference for this information from B3-12b(2) to B3-12b(3).	B-0c, B-1d
15.	Revised language in B-0d changing confirmation “prior to shipment” to “prior to receipt.”	B-0d, B-7
16.	Changed “packaging logs” to “packaging records” in B-0d.	B-0d
17.	In B-1b deleted “If the other waste streams also require new EPA hazardous waste numbers...a permit modification has been submitted...”	B-1b

Item #	Description of Change	Affected Sections
18.	Revised the liquid prohibition in B-1c. <ul style="list-style-type: none"> <li>• Clarified how the liquid waste prohibition applies to internal containers, payload containers, internal containers inside overpack containers and overpack payload containers</li> <li>• Clarified how the prohibition applies to debris items such as tubing</li> <li>• Clarified how the prohibition applies to S3000 and S4000 waste</li> </ul>	B-1c
19.	In B-1c in deleted the 1 sentence paragraph related to container venting and moved pertinent parts of this to the next paragraph.	B-1c
20.	In B-1d deleted the sentence; “The WSPF and the CIS will be transmitted to the Permittees...”	B-1d
21.	Added an option to revise a WSPF in B-1d when discrepancies identify different hazardous waste numbers or indicates that the waste belongs to a different waste stream.	B-1d
22.	In B-1d changed “Waste Stream Characterization Package” to “waste stream characterization information.”	B-1d
23.	In B-2 deleted paragraph discussing “...waste streams or containers that are not amendable to radiography...”	B-2
24.	Revised bullet in B-2 to require estimation of material parameter weights on a container basis by performance of radiography or VE or by estimation on a waste stream basis from AK for approved Scenario 1 or 2 AKSDs.	B-2
25.	Section B-3, was renamed to Waste Characterization Methods for Certified Waste Characterization Programs.	B-3
26.	Made the following general changes to B-3. <ul style="list-style-type: none"> <li>• Deleted redundant text</li> <li>• Re-organized so general characterization methods are in the following order; AK, Radiography and VE, HSGS and analysis, solids sampling and analysis</li> <li>• Deleted the distinction between newly generated and retrievably stored waste characterization requirements and combined common language to eliminate redundancy</li> <li>• Language related to TIC evaluation was deleted</li> </ul>	B-3

Item #	Description of Change	Affected Sections
27.	<p>Clarified text related to visual examination;</p> <p>Deleted “VE Technique” (B-3b),</p> <p>Deleted “VE in lieu of radiography” (B-3b),</p> <p>Added a training requirement for VE (B1-4).</p>	B-3b, B1-4
28.	<p>Added the following to the second paragraph in B-3c;</p> <p>“Representativeness of containers selected for headspace gas sampling will be validated by the certified characterization program and by the Permittees during an audit (Permit Attachment B6) via examination of documentation that shows that random samples were collected.”</p>	B-3c
29.	<p>Added the following to the second paragraph in B-3d;</p> <p>“Representativeness of containers selected for homogeneous solids and soils/gravel sampling and analysis will be validated by the certified characterization program and by the Permittees during an audit (Permit Attachment B6) via examination of documentation that shows that random samples were collected.”</p>	B-3d
30.	<p>Revised text in B-4a to require estimation of material parameter weights on a waste stream basis from Acceptable Knowledge information only when a Scenario 1 or 2 AKSD is being requested. Other affected sections include B-4a, B3, and B4-1.</p>	B-4a, B3, B4-1
31.	<p>Deleted Section B-4a(7), Records Management, and consolidated pertinent records management requirements from B-4a(7) into B-7 and deleted unnecessary information (e.g. internal RIDs process, lifetime records discussion).</p>	B-4a(7), B-7
32.	<p>Deleted the first sentence in B-5a related to when Phase 1 screening and verification occurs and clarified when Phase 1 screening occurs in subsequent text (B-5a-B-5a(2)).</p>	B-5a - B-5a(2)
33.	<p>In B-5a changed SPM “project level verification” to “project level reconciliation” in the text concerning preliminary activities to developing a WSPF.</p>	B-5a
34.	<p>Deleted an unnecessary reporting requirement in B-5a for discrepancies related to WSPFs reviews; if a waste stream profile form is not approved then the waste cannot be shipped to WIPP regardless of the discrepancy.</p>	B-5a
35.	<p>In B-5a(1) deleted the last two sentence in paragraph 2 concerning data structure for small quantity sites.</p>	B-5a(1)

Item #	Description of Change	Affected Sections
36.	In B-5a(1) updated NMED WWIS access information and moved it to the end of this section.	B-5a(1)
37.	In B-5a(1) deleted “for seven-packs, four packs, and three-packs” in reference to assembly as there are applicable assemblies not described here (e.g. the RH canister is also referred to as an assembly).	B-5a(1)
38.	In B-5a(2) deleted “Waste Matrix Code Group.”	B-5a(2)
39.	In B-5b clarified when Phase II screening occurs here and in subsequent text (B-5b and B-5b(3)).	B-5b – B-5b(3)
40.	In B-5b and B-5b(1) revised hazardous waste manifest information to correspond with item numbers and instructions on U.S. EPA Form 8700-22 and changed “container IDs” to “shipping package number.”	B-5b, B-5b(1)
41.	Reorganized and clarified information in B-5b(1) and B-5b(3) related to receipt of shipping packages/casks and container verification.	5b(1)
42.	In B-5b(3) deleted “This check also verifies that containers included in the shipment are those for which approved shipping data already exists in the WWIS...”	B-5b(3)
43.	B-7a and B-7b added clarification related to validated records.	B-7a, B-7b
44.	Renumbered and reorganized tables to correspond with the order that they appear in the text; Table B-9 renumbered to B-1 Table B-8 renumbered to B-2 Table B-1 renumbered to B-3 Table B-2 renumbered to B-4 Table B-3 renumbered to B-5 Table B-4 renumbered to B-6 Table B-5 renumbered to B-7 Table B-7 renumbered to B-8 Table B-6 renumbered to B-9	Tables B-1 to B-9

Item #	Description of Change	Affected Sections
45.	Renumbered Table B-1 to B-3 and revised to summarize requirements for HSGS analysis and totals analysis according to summary category groups. Deleted information that is redundant to the language in B. Deleted footnotes "b" and "c," these are related to constituents that are not TC constituents.	Table B-3
46.	Deleted non-Toxicity Characteristic (TC) constituents from tables and deleted Tentatively Identified Compound (TIC) evaluation requirements.	Tables B-3, B-4, B-5, B-6, Section B3-1
47.	Renumbered Table B-8 to B-2 and revised to correct the number of Hanford Site tanks from 177 to 175.	Table B-2
48.	Revised Table B-4 to update or delete footnotes.	Table B-4
49.	Added hexachlorobutadiene to Table B-5.	Table B-5
50.	Renumbered Table B-5 to B-7 and removed distinction between retrievably stored waste and newly generate waste and made corrections to correspond with characterization methods delineated by summary category groups.	Table B-7
51.	Renumbered Table B-7 to B-8; deleted field designations by modules; listed fields relevant to the Renewal Application; and deleted all but footnote "a."	Table B-8
52.	Renumbered Table B-6 to B-9 and changed "Generator/Storage Site" to "Certified Characterization Program Site Specific" and deleted "Variance documentation."	Table B-9
53.	Renumbered Figure B-2 to B-1 and changed "generator" to "Certified Characterization Program."	Figure B-1
54.	Renumbered Figure B-1 to B-2 and revised the example WSPF to correspond with changes made in the text in B and with B3-12b; changed "Generator Site" to "TRU Waste Site..", deleted "WIPP ID," changed "Description from WTWBIR" to "Waste Stream Description"; changed "Content Numbers" to "Content Codes"; deleted entries under "Acceptable Knowledge Information" and replaced with "AK Summary Report Title"; and changed "Confirmation Information" to "Waste Characterization Procedure(s) used..." per B3-12b.	Figure B-2
55.	Added instructions to B1, Introduction, for utilization of equipment/sampling methods not otherwise specified in the WAP.	B1, Introduction

Item #	Description of Change	Affected Sections
56.	In B1-1a(1) deleted “For all retrievably stored waste containers, the” and deleted “for retrievably stored waste” to be consistent with the change that removes the distinction between retrievably stored and newly generated waste characterization requirements.	B1-1a
57.	Added the following to B1-2a ; “One randomly selected container within a container will be chosen if the container contains individual waste containers.”	B1-2a
58.	Moved core sampling methodology from the representative QAO in B3-3 to to B1-2a(1), Waste Characterization Sampling Methods	B1-2a(1), B3-3
59.	In B1-4 Added the following to the VE activities documented using a second operator to clarify the operators responsibilities; “(i.e., when VE is performed with a second operator, each operator performing the VE shall observe for themselves the waste being placed in the container or the condition within the examined container when the waste is not removed).”	B1-4
60.	In B1-4 Changed “packaging logs” to “packaging records” and clarified that packaging records include packaging logs and packaging forms.	B1-4
61.	In B1-4 in reference to VE performed using two personnel in the second bullet changed VE expert to VE operator.	B1-4
62.	Corrected B1-4, line 1 paragraph 4 by changing “Visual Examination” to “Waste container packaging records” as indicated below and in sentence 3 of the same paragraph added “waste container packaging or” before “VE records,”  <del>“Visual examination records</del> <b>Waste container packaging</b> records may be used for characterization of TRU mixed waste.”	B1-4
63.	Added training requirement for VE to B1-4.	B1-4
64.	Added “Chain-of-Custody number” to bullet list in B1-5 and “Non-disposable” before “sampling coring tools and equipment...”	B1-5

Item #	Description of Change	Affected Sections
65.	Renumbered and reorganized tables to correspond with the order that they appear in the text; Table B1-5 renumbered to B1-1 Table B1-6 renumbered to B1-2 Table B1-7 renumbered to B1-3 Table B1-8 renumbered to B1-4 Table B1-9 renumbered to B1-5 Table B1-2 renumbered to B1-7 Table B1-4 renumbered to B1-9	Tables B1-1 – B1-9
66.	In B2-1a deleted “retrievably stored and newly generated” and “and repackaged or treated S3000 wastes.	B2-1a
67.	In B2-1a deleted “Using acceptable knowledge, generator/storage sites will classify the entire waste stream as hazardous or nonhazardous rather than individual waste containers” since this sentence is not relevant to this section (Statistical Selection of Containers for Totals Analysis).	B2-1a
68.	Revised language in B2-1a requiring a minimum of 5 samples to be obtained from S3000/S4000 waste streams that consist of less than 5 containers.	B2-1a
69.	Revised equation B2-4, changed $E_{voci}$ to $RT_{voci}$ and defined $RT_{voci}$ to “the PRQL for $VOC_i$ from Renewal Application Appendix B3, Table B3-2.”	Equation B2-4
70.	Revised the legend to Figure B2-1 to change “Generator” to “Certified Characterization Program” and to add “For waste stream with less than five S3000 or S4000 containers or less than ten S5000 containers each container will be sampled only once.”	Figure B2-1
71.	Deleted the subsection “Identification of Tentatively Identified Compounds” in B3-1.	B3-1
72.	Revised the solids sampling QAO in B3-3 to address EPA approved methods not specifically delineated in this section and to address completeness when either core sampling or other approved methods are being used.	B3-3
73.	Revised “F-test” language in the solid sampling precision QAO to allow the average of the co-located core analysis results to be used in calculating the waste stream variance.	B3-3

Item #	Description of Change	Affected Sections
74.	Deleted requirement for PDP participation in B3-3, Sampling of Homogeneous Solids and Soils/Gravel relative to “Comparability” QAO since the PDP is appropriate for precision and accuracy, but not for comparability.	B3-3
75.	Added “Representativeness is assured by collecting random samples using an approved method.”	B3-3
76.	In B3-9 deleted “and discrepancies identified by the Permittees during waste confirmation will be reported as a measure of acceptable knowledge accuracy.” from AK documentation accuracy quality requirement.	B3-9
77.	In B3-10b changed “regulatory threshold limit” to “regulatory level.”	B3-10b
78.	Deleted the following from B3-10b(2); “Once the data have received project-level validation and verification or when the Site Project Manager decides the sample no longer needs to be retained, the Site Project Manager must ensure that the laboratory is notified. Samples must be retained by the laboratory until this notification is received. Gas sample canisters may then be released from storage for cleaning, recertification, and subsequent reuse.”	B3-10b(2)
79.	Changed the title of B3-10b(3) to “Responding to Waste Stream Characterization Information Request” and revised the text to address Permittees waste stream related information requests. Deleted “Waste Stream Characterization Package.”	B3-10b(3)
80.	In B3-12b deleted “Waste Stream Characterization Package.”	B3-12b
81.	In B3-12b(1) deleted “Waste Matrix Code Group” and “Waste Material Parameter Weight Estimates per unit of Waste.” Changed “A listing of acceptable knowledge documentation used to identify the waste stream” to “AK Summary Report Title.”	B3-12b(1)
82.	In B3-12(2) changed “RTL” to “PRQL” in second bullet for headspace gas summary data; deleted “TIC listing and evaluations”; changed “TWBIR information” to “relevant inventory information”; changed “Complete AK summary” to “AK summation”; deleted “and any other information required by ...” in bullet 7; revised waste material parameter bullet to be required only for Scenario 1 and Scenario 2 AKSDs.	B3-12b(2)
83.	Renamed section B3-12b(3) to “Permittee Requested Waste Stream Characterization Information” and revised the section to delete “Waste Stream Characterization Package” and related details.	B3-12b(3)

Item #	Description of Change	Affected Sections
84.	Revised WAP Reporting Requirement for Non-Administrative Non-Conformances identified at the SPM level in B3-13 (4) from 5 calendar days to 7 calendar days.	B3-13
85.	Revised Table B3-1 to add “For Example” to the description column for the “Steel (packaging materials) and Plastics (packaging materials)” entries.	Table B3-1
86.	Revised Tables B3-2, B3-4, B3-6, and B3-8 to list only the information applicable to TC constituents for the HWNs listed in Table B-9. Also added “For Solids Analysis” to the titles for Table B3-4 and Table B3-6 to ensure that these tables are not confused with similar tables for VOC and semi volatile HSGS analysis. Added hexachlorobutadiene to Table B3-6 to be consistent with TC EPA HWNs in Table B-1. Deleted 1,4 dichlorobenzene and pyridine from Table B3-4 because these are semi volatile compounds. Added “TCLP RL (mg/L)” column to Tables B3-4, B3-6 and B3-8 with applicable values from 40 CFR 261.24, Table 1.	Table B3-2, B3-4, B3-6, B3-8
87.	Renumbered and reorganized tables to correspond with the order that they appear in the text;  Table B3-11 renumbered to B3-10  Table B3-12 renumbered to B3-11  Table B3-13 renumbered to B3-12  Table B3-14 renumbered to B3-13  Table B3-10 renumbered to B3-14	
88.	Made editorial corrections to Table B3-3, B3-5, B3-7, B3-9, B3-10, B3-11, B3-14 and deleted “For visual examination of newly generated waste” from Table B3-10 comments column, Video media reference entry to be consistent with the change that removes the distinction between retrievably stored and newly generated waste characterization requirements. Deleted TIC evaluation listing in Table B3-11.	Table B3-3, B3-5, B3-7, B3-9, B3-10, B3-11, B3-14
89.	Deleted Figure B3-1, Overall Headspace Gas Sampling Scheme Illustrating Manifold Sampling.	Figure B3-1
90.	Revised text to require estimation of material parameter weights only when a Scenario 1 or 2 AKSD is being requested.	B4-1
91.	To B4-2 in reference to NMED participation in audits added; “as observers during site certification audits delineated” to be consistent with similar text in B6.	B4-2

Item #	Description of Change	Affected Sections
92.	Deleted text in B4-2b related to retrievably stored and newly generated waste to be consistent with the change that removes the distinction between retrievably stored and newly generated waste characterization requirements.	B4-2b
93.	In B4-3b, bullet 4 deleted “conservative” application of hazardous waste numbers and replaced with “applicable” and deleted “all potential hazardous waste numbers unless the sites choose to justify an alternative assignment and document the justification in the auditable record.”	B4-3b, B4-3e
94.	In B4-3b in reference to assignment of listed HWNs deleted “all potential hazardous waste numbers unless the sites choose to justify an alternative assignment and document the justification in the auditable record” and replaced this with “applicable.”	B4-3b
95.	In B4-3b deleted “Sites shall ensure that results of audits of the TRU mixed waste characterization programs at the site are available in the records.”	B4-3b
96.	Consolidated the following sentence into the bullet list in this section (B4-3c); “Container inventories for TRU mixed waste currently in retrievable storage shall be delineated into waste streams by correlating the container identification to all of the required acceptable knowledge information and any supporting acceptable knowledge information.”	B4-3c
97.	In B4-3d deleted the bullet “A complete reference list including all mandatory and supporting information.”	B4-3d
98.	In B4-3e deleted the paragraphs and related information concerning resolving the assignment of F-listed HWNs using chemical sampling and analysis.	B4-3e
99.	To B5-2 Added the following to the QAPjP signature and date page; “(including unique document number and current revision)” and added “unique document number, the current revision” to the first sentence in the second paragraph to make this consistent with paragraph 1 information.	B5-2
100.	In B5-2 deleted “The site project manager shall also be responsible for notifying the DOE field office of changes.”	B5-2
101.	Updated B6 Checklists to correspond with the revised WAP.	B6

Item #	Description of Change	Affected Sections
102.	Revised the first sentence of the introduction to B7 to read; “Renewal Application Appendix B7, Permittee Level TRU Waste Confirmation Processes, describes the actions that the Permittees will take to confirm waste prior to receipt for storage and disposal at the WIPP.”	B7, Introduction
103.	Added text to B7, Introduction indicating that waste confirmation will not be performed when a Scenario 1 or Scenario 2 AKSD has been approved for a waste stream.	B7, Introduction
104.	Deleted the first sentence (The Permittees demonstrate compliance with the Permit by ensuring that the waste characterization process...) of the second paragraph of the introduction to B7.	B7, Introduction
105.	To B7-1 added the following text from Section 310 of Pub. L. 108-447;  “As required by Section 310, confirmation shall be limited to “(1) confirmation that the waste contains no ignitable, corrosive, or reactive waste through the use of either radiography or visual examination of a statistically representative subpopulation of the waste; and (2) review of the Waste Stream Profile Form to verify that the waste contains no ignitable, corrosive, or reactive waste and that assigned Environmental Protection Agency hazardous waste numbers are allowed for storage and disposal by the WIPP Hazardous Waste Facility Permit.”	B7-1
106.	Added the following information to B7-1 and deleted it from B7-1a;  “Confirmation radiography (Section B7-1b) and confirmation VE (Section B7-1c) can detect liquid wastes and containerized gases, which are prohibited for receipt at WIPP. The prohibition of liquids and containerized gases prevents the disposal of corrosive, ignitable, or reactive wastes.”	B7-1

Item #	Description of Change	Affected Sections
107.	<p>Added the following to B7-1;</p> <p>“Waste confirmation shall be completed by:</p> <ul style="list-style-type: none"> <li>• Performing confirmation radiography or confirmation VE on the waste container(s); and/or</li> <li>• Performing confirmation radiography or confirmation VE by a review of certified characterization program radiography or VE records; and</li> <li>• Reviewing Waste Stream Profile Forms for each waste stream in each shipment to verify that the waste contains no ignitable (D001), corrosive (D002), or reactive (D003) waste and that assigned EPA Hazardous Waste Numbers are allowed for storage and disposal at the WIPP.”</li> </ul>	B7-1
108.	Deleted all but the last paragraph of B7-1a (which was moved to become paragraph 1). The deleted text included the requirement to confirm physical form.	B7-1a
109.	Deleted the first sentence in B7-1a(1) Confirmation Training Requirements, and the last sentence in this section related to training for the Permittee management representative. Added the following sentence; “The personnel performing waste confirmation shall be trained in accordance with the requirements of Renewal Application Appendix H1 (RCRA Hazardous Waste Management Job Titles and Descriptions).”	B7-1a(1)
110.	<p>Moved the sentence listed below from paragraph 4 of B7-1a(1) into the third paragraph of this section.;</p> <p>“For containers that have been characterized using radiography by the certified characterization programs in accordance with the method in Renewal Application Appendix B1 (Waste Characterization Sampling Methods), Section B1-3, the Permittees may perform confirmation by review of the certified characterization program’s radiography audio and video recordings.”</p>	B7-1a(1)
111.	In B7-1b deleted descriptive radiography information that can be found in other WAP sections.	B7-1b
112.	Deleted section B7-1b(1) Radiography Training.	B7-1b(1)
113.	Renumbered B7-1b(2) to B7-1b(1), changed the title of this section, and deleted the second paragraph in this section related to training.	B7-1b(1)

Item #	Description of Change	Affected Sections
114.	Deleted the last sentence in B7-1b(1); “When confirmation is performed by review of audio/video recorded scans produced by the generator/storage site as specified in Renewal Application Appendix B1, Section B1-3, independent observations shall be performed on two waste containers per shipment or two containers per day, whichever is less frequent.”	B7-1b(1)
115.	Deleted the requirement in B7-1c to confirm waste matrix code and waste stream description. Deleted all information not pertinent to confirming that the waste containers no liquids in excess of TSDF-WAC limits or compressed gases. Clarified in the last sentence in this section that “Classified information will not be recorded on confirmation forms.”	B7-1c
116.	Deleted section B7-1c(1) Visual Examination Training.	B7-1c(1)
117.	Renumbered B7-1c(2) to B7-1c(1), changed the title of this section, and added the following two sentences; “The Permittees shall be responsible for monitoring the quality of the confirmation VE data and calling for corrective action, when necessary. Confirmation VE data are assured by using standardized confirmation VE procedures and operator training.” Deleted the last paragraph related to VE Expert.	B7-1c(1)
118.	In B7-1d(1) replaced “radiography data form” with “confirmation form”; deleted “the waste stream waste confirmation” in the Precisions QAO; deleted “using a target to tune the image for maximum sharpness and by, ” in the Accuracy QAO; replaced “A video and audio media recording of the radiography examination and a validated radiography data” with “The results of confirmation radiography will be documented on a confirmation form.” Made other revisions to the QAOs in this section.	B7-1d(1)
119.	In B7-1d(2) replaced “VE data form” with “confirmation form,” deleted “to waste stream waste confirmation” from the Precision QAO; deleted “within in each waste stream in each shipment” from the Representativeness QAO; and replaced “operator qualification” with “operator training” in the Comparability QAO.	B7-1d(2)

Item #	Description of Change	Affected Sections
120.	<p>Added a new section B7-1e, Waste Stream Profile Form Review with the following requirement;</p> <p style="padding-left: 40px;">“The Permittees shall review the WSPF associated with each selected waste container to ensure that the waste contains no ignitable, corrosive, or reactive waste and that the assigned Hazardous Waste Numbers are allowed for storage and disposal at the WIPP. This review is documented on the confirmation form.”</p>	B7-1e
121.	Moved some review requirements from B7-1e(2) Permittee Management Review to B7-1f(1) and deleted B7-1e(2).	B7-1e(2)
122.	Renumbered B7-1e to B7-1f, changed the title of this section and replaced “validation of radiography and VE data” with “validation for confirmation.”	B7-1f
123.	Renumbered B7-1e(1) to B7-1f(1); in the first sentence replaced “radiography and/or VE confirmation data for each shipment” with “confirmation;” revised the second sentence to read as follows “This review will be performed before the waste shipment is received at the WIPP facility.”	B7-1f(1)

Item #	Description of Change	Affected Sections
124.	<p>Deleted the first bullet in B7-1f(1) related to data generation and reduction reviews and deleted most of the third bullet related to “independent observations. Added the following;</p> <ul style="list-style-type: none"> <li>• “The Quality Control checks have been performed (e.g., replicate scans).</li> <li>• The data meet the established QAOs.</li> <li>• The confirmation form indicates that the waste container data for the selected container have been reviewed to ensure that the waste contains no ignitable, corrosive, or reactive waste.</li> <li>• The confirmation form indicates that the WSPF has been reviewed to ensure the waste contains no ignitable, corrosive, or reactive waste and that the assigned Hazardous Waste Numbers are allowed for storage and disposal at the WIPP.</li> </ul> <p>Upon completion of the Independent Technical Review, the waste confirmation data for the shipment shall be submitted to the WIPP facility operating record as non-permanent records. Waste confirmation data includes radiography and VE confirmation forms, audio and video media, and review checklists.”</p>	B7-1f(1)
125.	<p>Delete the following out of the second paragraph in B7-2; “because the results of waste confirmation for the waste stream indicated that the TRU mixed waste being examined did not match the waste stream description. The generator/storage site will thoroughly evaluate the potential impacts on waste that has been shipped to WIPP. The Permittees will evaluate the potential that prohibited items were shipped to WIPP and what remedial actions should occur, if any. The results of these evaluations will be provided to NMED before shipments of affected waste streams resume.”</p>	B7-2
126.	Deleted figure B7-1, Overview of Waste Confirmation.	Figure B7-1
127.	Revised confirmation training requirements in H1 and H2 to correspond with the changes made in B-7.	H1, H2

## Guide to Changes to Renewal Application Chapter B, Section B-3

### **B-3 Generator Waste Characterization Methods for Certified Characterization Programs**

The characterization techniques used by generator/storage sites certified characterization programs includes acceptable knowledge (AK) and may also include, as necessary, headspace gas sampling and analysis radiography and/or VE, radiography, visual examination headspace-gas sampling and analysis, and homogeneous solids and soils/gravel waste sampling and analysis. ~~All characterization activities are~~ These characterization techniques, shall be performed, shall be performed, as applicable, in accordance with ~~the~~ this WAP. Table B-57 provides a summary of the characterization requirements for TRU mixed waste.

### **B-3a Sampling and Analytical Methods**

#### **B-3a(1) Headspace Gas Sampling and Analysis (This section is now at B-3c)**

#### **B-3a Acceptable Knowledge (This was section B-3b in the permit)**

Acceptable knowledge (~~AK~~) is used in TRU mixed waste characterization activities in five ways:

- To delineate TRU mixed waste streams
- To assess whether TRU mixed wastes comply with the TSDF-WAC
- To assess whether TRU mixed wastes exhibit a hazardous characteristic (20.4.1.200 NMAC, incorporating 40 CFR §261 Subpart C)
- To assess whether TRU mixed wastes are listed (20.4.1.200 NMAC, incorporating 40 CFR §261 Subpart D)
- To estimate waste material parameter weights when seeking a Scenario 1 or a Scenario 2 AKSD

Acceptable knowledge is discussed in detail in Renewal Application Appendix B4, which outlines the minimum set of requirements and DQOs which shall be met by the generator/storage sites certified characterization programs in order to use acceptable knowledge AK. In addition, Section B-5a(3) of this Renewal Application ~~Appendix~~ describes the assessment of acceptable knowledge AK through the Permittees' Audit and Surveillance Program.

#### **B-3a(2) Homogeneous and Soil/Gravel Waste Sampling and Analysis (This is now section B-3d)**

#### **B-3b Radiography and Visual Examination (This was section B-3c)**

Radiography is a nondestructive qualitative and quantitative technique that involves X-ray scanning of waste containers to identify and verify waste container contents. Visual examination

~~(VE)~~ constitutes opening a container and physically examining its contents. ~~Generator/storage sites~~ Certified characterization programs shall perform radiography or VE of 100 percent of ~~CH TRU~~ TRU mixed waste containers in waste streams except for those waste streams for which the Permittees approve a Scenario 1 or Scenario 2 ~~Determination~~ AKSD Request. ~~No RH TRU mixed waste will be shipped to WIPP for storage or disposal without documentation of radiography or VE of 100 percent of the containers as specified in Renewal Application Appendix B1.~~

Radiography and/or ~~visual examination~~ VE will be used, when necessary, to examine a waste container to verify its physical form. These techniques can detect liquid wastes and containerized gases, which are prohibited for receipt at WIPP disposal. The prohibition of liquids and containerized gases prevents the shipment disposal of corrosive, ignitable, or reactive wastes. Radiography and/or VE are also able to confirm that the physical form of the waste matches its waste stream description (i.e., Homogeneous Solids, Soil/Gravel, or Debris Waste) [including uncategory metals]. If the physical form does not match the waste stream description, the waste will be designated as another waste stream and assigned the preliminary EPA hazardous waste numbers associated with that new waste stream assignment. That is, if radiography and/or VE indicates that the waste does not match the waste stream description arrived at by ~~acceptable knowledge~~ AK characterization, a non-conformance report will be completed and the inconsistency will be resolved as specified in Renewal Application Appendix B4. The proper waste stream assignment will be determined (including preparation of a new WSPF, if necessary), the correct EPA hazardous waste codes numbers a discussion of acceptable knowledge and its verification process will be assigned, and the resolution will be documented. Refer to Renewal Application Appendix B4 for a discussion of AK and its verification process.

~~Generator/storage sites may conduct visual examination of 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 that the container is filled with liquid and adding this volume to the total liquid in the payload container (e.g., 55-gallon drum or SWB). The payload container would be rejected and/or repackaged to exclude the container if it is over the TSDF WAC limits. When radiography is used, or visual examination of transparent containers is performed, if any liquid in inner containers is detected, the volume of liquid shall be added to the total for the payload container. Radiography, or the equivalent, will be used as necessary 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. Radiographic examination protocols and QA/QC methods are provided in Permit Renewal Application Appendix B1. Radiography and VE shall be subject to the Permittees' Audit and Surveillance Program (Permit Attachment Renewal Application Appendix B6).~~

**B-3a(3) Laboratory Qualification ( This section has moved to B-3e)**

**B-3c Headspace Gas Sampling and Analysis**

Representative headspace gas sampling and analysis shall be used by generator/storage sites certified characterization programs to determine the types and concentrations of VOCs in the void volume of randomly selected waste containers in order to resolve the assignment of EPA hazardous waste numbers for those debris waste streams for which an AK Sufficiency Determination a Scenario 1 or Scenario 3 AKSD Request has not been approved by the Permittees. In addition, VOC constituents will be compared to those assigned by acceptable knowledge, which may include an analysis of radiolytically derived VOCs. The generator/storage sites may also consider radiolysis and packaging materials when assessing the presence of hazardous constituents in the headspace gas results, and whether radiolysis would generate wastes which exhibit the toxicity characteristic.

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 Renewal Application Appendix B2. Representativeness of containers selected for waste subjected to headspace gas sampling analysis will be validated by the certified characterization program and by the Permittees during an audit (Renewal Application Appendix B6) via examination of documentation that shows that random samples were collected.

The HSG sampling method provided in Renewal Application Appendix B1 will be used by certified characterization programs to resolve the assignment of TC EPA hazardous waste numbers on the VOCs in the void volume of randomly selected waste containers. The certified characterization programs may consider packaging materials when assessing the presence of hazardous constituents in the HSG results. Refer to Renewal Application Appendix B4 for additional clarification regarding hazardous waste number assignment and headspace gas HSG results. The methods for random selection of containers for headspace gas sampling and analysis are specified in Renewal Application Appendix B2. Headspace gas sampling and analysis shall be subject to the Permittees' Audit and Surveillance Program (Permit Attachment B6).

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 are reported as tentatively identified compounds (TICs) in the analytical BDR and shall be added to the target analyte list if detected in a given waste stream, if they appear in the 20.4.1.200 NMAC (incorporating 40 CFR §261) Appendix VIII, and if they are reported in 25% of the waste containers sampled from a given waste stream. The headspace gas analysis method Quality Assurance Objectives (QAOs) are specified in Renewal Application Appendix B3.

### **B-3d Characterization Techniques and Frequency for Newly Generated and Retrievably Stored Waste (This is now part of section B-3f, Section title has also changed)**

#### **B-3d Homogeneous and Soils/Gravel Waste Sampling and Analysis**

Representative homogeneous and soils/gravel waste sampling and analysis shall be used by generator/storage sites certified characterization programs to resolve the assignment of EPA hazardous waste numbers for homogeneous solids and soils/gravel waste streams for which an AK Sufficiency Determination a Scenario 1 or Scenario 3 AKSD Request has not been approved by the Permittees. ~~Sampling of homogeneous and soil/gravel wastes shall result in the collection of a sample that is used to resolve the assignment of hazardous waste numbers.~~ Sampling is accomplished through coring or other EPA approved sampling, which is described in Renewal Application Appendix B1. ~~For those waste streams defined as Summary Category Groups S3000 or S4000 on page B-3, Debris that may also be present within these wastes need not be sampled.~~

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 Renewal Application Appendix B2. ~~Homogeneous and soil/gravel sampling and analysis shall be subject to the Permittees' Audit and Surveillance Program (Renewal Application Appendix B6).~~ Representativeness of containers selected for waste subjected to homogenous solids and soils/gravel sampling and analysis will be validated by the certified characterization program and by the Permittees during an audit (Renewal Application Appendix B6) via examination of documentation that shows that random samples were collected.

Totals or Toxicity Characteristic Leaching Procedure (TCLP) analyses for VOCs, semi-volatile organic compounds (SVOCs), and RCRA-regulated metals are used to ~~determine waste parameters in soils/gravels and solids that may be important to the performance within the disposal system (Tables B-3 and B-4).~~ resolve the assignment of TC EPA hazardous waste numbers in homogeneous solids and soils/gravel (Tables B-5 and B-6). To determine if a waste exhibits a ~~toxicity characteristic TC~~ for compounds specified in 20.4.1.200 NMAC (incorporating 40 CFR §261, Subpart C), ~~TCLP may be used instead of total analyses.~~ The generator certified characterization program will use the results from these analyses to determine if a waste exhibits a ~~toxicity characteristic TC~~. The mean concentration of ~~toxicity characteristic TC~~ contaminants ~~are~~ is 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 20.4.1.200 NMAC (incorporating 40 CFR §261 Subpart C), expressed as total/TCLP values, to determine if the waste stream exhibits a ~~toxicity characteristic TC~~. A comparison of total analyses and TCLP analyses is presented in Renewal Application Addendum B1 ~~Appendix C3 of the WIPP RCRA Part B Permit Application (DOE, 1997), and a discussion of the  $UCL_{90}$  is included in Renewal Application Appendix B2.~~ If ~~toxicity characteristic (TC)~~ wastes are identified, these will be compared to those determined by acceptable knowledge AK and TC waste numbers will be revised as warranted. Refer to Renewal Application Appendix B4 for

additional clarification regarding hazardous waste number assignment and homogeneous solid and soil/s/gravel analytical results.

~~Analytical methods used by the laboratories shall: 1) satisfy all of the appropriate QAOs, and 2) be implemented through laboratory documented SOPs standard operating procedures. These analytical QAOs are discussed in detail in Renewal Application Appendix B3.~~

~~B-3d(1) Newly Generated Waste (This is now part of section B-3g, Section Title has also changed)~~

**B-3d(1)(a) Sampling of Newly Generated Homogeneous Solids and Soil/Gravel (Now part of section B-3g(1), Section Title has also changed)**

### **B-3d(2) Retrievably Stored Waste**

~~All retrievably stored waste containers will first be delineated into waste streams using acceptable knowledge. The Permittees will require that the generator/storage sites document the methods used to delineate waste streams in the acceptable knowledge record and Acceptable Knowledge Summary Report. Retrievably stored waste containers may be examined using radiography or VE to determine the physical waste form (Summary Category Group), the absence of prohibited items, and additional waste characterization techniques that may be used based on the Summary Category Groups (i.e., S3000, S4000, S5000).~~

~~The headspace gas sampling method provided in Permit Appendix B1 will be used, when necessary, to resolve the assignment of EPA hazardous waste numbers to debris waste streams, as specified in Permit Appendix B4.~~

~~A statistically selected portion of retrievably stored homogeneous solids and soil/gravel wastes will be sampled and analyzed for total VOCs, SVOCs, and metals, when necessary. The sample location selection method is described in Permit Appendix B2. The sampling methods for these wastes are provided in Permit Appendix B1.~~

~~The toxicity characteristic of retrievably stored homogeneous solids and soil/gravel wastes will be determined using total analysis of toxicity characteristic parameters or TCLP. To determine if a waste exhibits a toxicity characteristic for compounds specified in 20.4.1.200 NMAC (incorporating 40 CFR §261, Subpart C), TCLP may be used instead of total analyses. Appendix C3 of the WIPP RCRA Part B Permit Application (DOE, 1997) discusses comparability of totals analytical results to those of the TCLP method.~~

~~Representativeness of containers selected for headspace gas sampling and waste subjected to homogeneous solids and soil/gravel sampling and analysis will be validated by the generator/storage site and by the Permittees during an audit (Permit Appendix B6) via examination of documentation that shows that random samples were collected. (Because representativeness is a quality characteristic that expresses the degree to which a sample or group of samples represent the population being studied, the random sampling of waste streams ensures representativeness.)~~

### B-3e Laboratory Qualification

The Permittees will ensure that generator/storage sites certified characterization programs conduct analyses using laboratories that are qualified through participation in the a written performance demonstration program (PDP) (DOE, 2003, 2005) (e.g., Performance Development Program Plans for Analysis of Solid Waste Forms). Required Quality Assurance Objectives (QAOs) are specified in Renewal Application Appendix B3. In addition, methods and supporting performance data demonstrating QAO compliance shall be ensured by the Permittees during the annual certification audit of the laboratories.

### B-3f Characterization Techniques and Frequency for Transuranic Mixed Waste

Generator/storage sites Certified characterization programs will use acceptable knowledge AK to delineate all TRU mixed waste containers into waste streams for the purposes of grouping waste for further characterization. The analyses performed may differ based on the waste stream and the physical form of the waste (i.e., heterogeneous debris waste cannot be sampled for totals or TCLP analyses). ~~Both retrievably stored and newly generated wastes will be delineated in this fashion, though the types of acceptable knowledge used may differ.~~ Section B-3b a discusses the use of acceptable knowledge AK, sampling, and analysis in more detail. Acceptable knowledge is discussed more completely in Renewal Application Appendix B4. Every TRU mixed Waste streams will be assigned EPA hazardous waste numbers based upon acceptable knowledge AK, and the generator/storage sites certified characterization programs may resolve the assignment of EPA hazardous waste numbers using headspace gas HSG (Summary Category Group S5000 only) and or solid sampling and analysis (Summary Category Groups S3000 and S4000 only).

~~In the CIS for each waste stream, the generator/storage site will be required to document their methods, and the findings from those methods, for determining the physical form of the waste and the presence or absence of prohibited items for both retrievably stored and newly generated waste. Radiography and/or VE may be used to verify the physical form of retrievably stored TRU mixed waste. For newly generated waste, physical form and prohibited items may either be documented during packaging (using the VE technique) or verified after packaging using radiography (or VE in lieu of radiography).~~

For debris waste streams that do not have an AK Sufficiency Determination a Scenario 1 or Scenario 3 AKSD approved by the Permittees, containers selected in accordance with Renewal Application Appendix B2 from those waste streams must be sampled and analyzed for VOCs in the headspace gas HSG. Likewise, A statistically selected portion of homogeneous solids and soils/gravel waste streams must be sampled and analyzed for RCRA-regulated total VOCs, SVOCs, and metals when those waste streams do not have an AK Sufficiency Determination a Scenario 1 or Scenario 3 AKSD approved by the Permittees. Sampling and analysis methods used for waste characterization are discussed in Section B-3a c and B-3d.

~~In the process of performing organic headspace and solid sample analyses, nontarget compounds may be identified. These compounds will be reported as TICs. TICs reported in 25% of the samples and listed in 20.4.1.200 NMAC (incorporating 40 CFR §261) Appendix VIII, will be compared with acceptable knowledge data to determine if the TIC is in a listed hazardous waste~~

~~in the waste stream. TICs identified through headspace gas analyses that meet the Appendix VIII list criteria and the 25 percent reporting criteria for a waste stream will be added to the headspace gas waste stream target list, regardless of the hazardous waste listing associated with the waste stream. TICs subject to inclusion on the target analyte list that are toxicity characteristic parameters shall be added to the target analyte list regardless of origin because the hazardous waste designation for these numbers is not based on source. However, for toxicity characteristic and non-toxic F003 constituents, the site may take concentration into account when assessing whether to add a hazardous waste number. TICs reported from the Totals VOC or SVOC analyses may be excluded from the target analyte list for a waste stream if the TIC is a constituent in an F-listed waste whose presence is attributable to waste packaging materials or radiolytic degradation from acceptable knowledge documentation. If the TIC associated with a total VOC or SVOC analysis cannot be identified as a component of waste packaging materials or as a product of radiolysis, the generator/storage site will add these TICs to the list of hazardous constituents for the waste stream (and assign additional EPA listed hazardous waste numbers, if appropriate). A permit modification will be submitted to NMED for their approval to add these constituents (and waste numbers), if necessary. For toxicity characteristic compounds and non-toxic F003 constituents, the generator/storage site may consider waste concentration when determining whether to change a hazardous waste number. Refer to Renewal Application Appendix B3 for additional information on TIC identification.~~

~~Waste characterization solid sampling and analysis activities may differ for retrievably stored waste and newly generated waste. The waste characterization processes used by the generator/storage sites for both retrievably stored and newly generated waste streams will be evaluated during the Permittees' audit of the site.~~

The typical waste characterization data collection design used by the generator/storage sites certified characterization programs for each type of TRU mixed waste is described in the following sections. Table B-43 provides a summary of headspace gas HSG and homogeneous solids and soils/gravel sample analyses hazardous waste characterization requirements for all TRU mixed waste by waste characterization parameters Summary Category Group. Table B-57 summarizes the parameters, methods, and rationales for ~~stored and newly generated~~ CH TRU mixed wastes according to their waste forms.

~~WIPP may accept TRU mixed waste that has been repackaged or treated. Treated waste shall retain the original waste stream's listed hazardous waste number designation.~~

For TC constituents, the certified characterization program may take concentration into account when assessing whether to add a hazardous waste number. Some listed hazardous wastes are listed solely because they exhibit the characteristic of ignitability, corrosivity, and/or reactivity. These F,K,P, and U wastes do not retain the associated listed hazardous waste number if the wastes no longer exhibit the characteristics of ignitability, corrosivity, and/or reactivity. The WIPP may accept TRU mixed waste that has been treated as long as the assigned EPA hazardous waste numbers are approved for disposal at WIPP (Table B-1).

## **B-3g Transuranic Mixed Waste**

**(This came from section B-3d(1))**

The RCRA regulated constituents in newly generated wastes will typically be documented at the time of generation based on acceptable knowledge for the waste stream. Newly generated TRU mixed waste characterization typically begins with verification that processes generating the waste have operated within established written procedures.

Waste containers are delineated into waste streams using acceptable knowledge AK. The Permittees will require that the generator/storage sites certified characterization programs document the methods used to delineate waste streams in the acceptable knowledge AK record and Acceptable Knowledge Summary Report.

Radiography and/or VE will be performed as specified in Renewal Application Appendix B1, Sections B1-3 and/or B1-4 to determine that the physical form of the waste (Summary Category Group) corresponds to the physical form of the assigned waste stream. Waste Matrix Code, waste material parameters, and the absence of prohibited items. may be accomplished either during packaging or by performing radiography as specified in Permit Appendix B1, Section B1-3 for retrievably stored waste. Instead of using a video/audio tape as required with VE in lieu of radiography, the VE method for newly generated waste (or repackaged retrievably stored waste) uses a second operator, who is equally trained to the requirements stipulated in Permit Appendix B1, to provide additional verification by reviewing the contents of the waste container to ensure correct reporting. The data are then used to identify additional waste characterization techniques that may be used based on the Summary Category Groups since waste within the Homogeneous Solids and Soils/Gravel Summary Category Groups are characterized using different techniques than the waste in the Debris Waste Summary Category Group. The packaging configuration, type and number of filters, and rigid liner vent hole presence and diameter necessary to determine the appropriate DAC in accordance with Renewal Application Appendix B1, Section B1-1, may be documented as part of the characterization information collected during packaging, radiography, and/or VE for those containers of debris waste that will undergo HSG sampling and analysis.

Visual examination activities shall be documented on video/audio media or by using a second operator, who is equally trained to the requirements stipulated in Renewal Application Appendix B1, to provide additional verification by reviewing the contents of the waste container to ensure correct reporting. If the second operator cannot provide concurrence, corrective actions<sup>1\*</sup> will be taken as specified in Permit Renewal Application Appendix B3. The subsequent waste characterization activities depend on the assigned Summary Category Group, since waste within the Homogeneous Solids and Soils/Gravel Summary Category Groups may be characterized using different techniques than the waste in the Debris Waste Summary Category Group. The packaging configuration, type and number of filters, and rigid liner vent hole presence and diameter necessary to determine the appropriate drum age criteria (DAC) in accordance with

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<sup>1\*</sup> "Corrective action" as used in this WAP and its attachments does not mean corrective action as defined under HWA, RCRA, and their implementing regulations.

~~Permit Appendix B1, Section B1-1, may be documented as part of the characterization information collected during the packaging of newly generated waste or repackaging of retrievably stored waste for those containers of debris waste that will undergo headspace gas sampling and analysis.~~

### B-3g(1) Sampling of Homogeneous Solids and Soils/Gravel

When a ~~Determination~~ Scenario 1 or Scenario 3AKSD Request has not been approved by the Permittees, sampling and analysis of ~~newly generated~~ homogeneous solids and soils/gravel waste streams shall be conducted in accordance with the requirements specified in Renewal Application Appendix B1, Section B1-2. The number of ~~newly generated~~ homogeneous solids and soils/gravel waste containers to be sampled will be determined using the procedure specified in ~~Renewal Application Appendix B2, Section B2-1~~, wherein a statistically selected portion of the waste will be sampled.