STATE OF NEW MEXICO
BEFORE THE OFFICE OF THE SECRETARY

IN THE MATTER OF THE
APPLICATION OF THE
WASTE ISOLATION PILOT PLANT
FOR A PERMIT MODIFICATION TO
HAZARDOUS WASTE FACILITY PERMIT
EPA I.D. NUMBER NM4890139088

SETTLEMENT AGREEMENT AND STIPULATIONS ON DRAFT PERMIT

This Settlement Agreement ("Agreement") is effective on the 2nd day of August, 2018, by and between the U.S. Department of Energy and Nuclear Waste Partnership LLC (hereinafter referred to as “Co-Permittees”), and Concerned Citizens for Nuclear Safety, Nuclear Watch New Mexico, and Southwest Research and Information Center (hereinafter referred to as “Interested Persons”), and the Hazardous Waste Bureau (“HWB”) of the New Mexico Environment Department (“NMED”) (HWB, Co-Permittees, and Interested Persons are collectively referred to as the “Parties”).

1. WHEREAS, the Co-Permittees have filed a permit modification request with NMED regarding the Panel Closure System for the above referenced facility and permit;

2. WHEREAS, the HWB reviewed the subject permit modification request, and subsequently issued a draft permit on February 22, 2018 through a public notice requesting public comment;

3. WHEREAS, the Interested Persons have objected to the draft permit and have requested a public hearing be held on the subject permit modification request; and,

4. WHEREAS, pursuant to 20.4.1.901.A(4) NMAC, the Parties have met to discuss the contested issues in this matter, and have agreed to stipulate that certain conditions will be placed in the above-captioned hazardous waste facility permit that is the subject of this proceeding to resolve the contested issues.

5. NOW THEREFORE, in consideration of the mutual covenants contained in this Agreement and in the interest of resolution of this matter without the necessity of a contested hearing on the permit modification request and eliminating future conflicts related to the permit modification request that is the subject of this proceeding, the Parties stipulate and agree that claims and disputes that the Parties raised or could have raised in this matter shall be and are hereby settled and resolved, compromised, released, and dismissed with prejudice, as set forth below:

a. The Parties agree to the conditions as set forth in the revised draft permit attached hereto as Exhibit 1.
b. Interested Persons agree to withdraw their hearing request in this matter and waive any challenge to the subject revised draft permit, including but not limited to any public hearing or judicial appeal of approval and issuance of the revised draft permit by NMED.

c. Each signatory below has been fully and duly authorized to execute this Agreement by their respective Party and to bind their respective Party, and its successors in interest and assigns hereby.

d. This Agreement constitutes the entire agreement between the Parties and all prior conversations, negotiations, meetings, discussions, drafts, and writings of any kind are specifically superseded by this Agreement, and there exists between the Parties no oral agreement, understanding, statement, promise, representation, warranty, or inducement other than as is expressly set forth in this Agreement.

e. Nothing contained in this Agreement shall be construed to hinder or prohibit any Party from bringing any action to enforce this Agreement or from bringing any action for the breach of this Agreement.

IN WITNESS WHEREOF, the Parties have set their hand hereto as of the day and year set forth below.

For: U.S. Department of Energy, Carlsbad Field Office

By: [Signature]

George T. Basabilvazo

Title: Chief Scientist

Date: August 2, 2018

For: Nuclear Waste Partnership LLC

By: [Signature]

Dennis N. Cook

Title: General Counsel/Vice President

Date: August 2, 2018
For: Concerned Citizens for Nuclear Safety

By: Joni Arends

Title: Executive Director

Date: August 2, 2018

For: Nuclear Watch New Mexico

By: Scott Kovac

Title: Operations and Research Director

Date: August 2, 2018

For: Southwest Research and Information Center

By: Don Hancock

Title: Director of Nuclear Waste Safety Program

Date: Aug 2, 2018

For: Hazardous Waste Bureau

New Mexico Environment Department

By: J.C. Borrego

Title: Deputy Secretary

Date: 8/2/10
SETTLEMENT AGREEMENT AND STIPULATIONS ON DRAFT PERMIT

Exhibit 1
6.6. DISPOSAL OR DECONTAMINATION OF EQUIPMENT, STRUCTURES, AND SOILS

The Permittees shall decontaminate or dispose of all contaminated equipment, structures, and soils, as specified in Permit Attachment G and as required by 20.4.1.500 NMAC (incorporating 40 CFR §264.114).

6.7. CERTIFICATION OF CLOSURE

Within 60 calendar days of completion of closure of each Underground HWDU, and within 60 calendar days of completion of final closure, the Permittees shall certify in writing to the Secretary that the Underground HWDUs and/or facility have been closed as specified in Permit Attachment G and as required by 20.4.1.500 NMAC (incorporating 40 CFR §§264.115 and 264.601).

6.8. SURVEY PLAT

No later than the submission of the certification of closure of each Underground HWDU, the Permittees shall submit a survey plat detailing the location and dimensions of each Underground HWDU with respect to permanently surveyed benchmarks, as required by 20.4.1.500 NMAC (incorporating 40 CFR §264.116).

6.9. CLOSURE OF PERMITTED CONTAINER STORAGE UNITS

At closure of the WHB Unit and Parking Area Unit, the Permittees shall remove all hazardous waste and hazardous waste residues from the containment system, in accordance with the procedures in Permit Attachment G, as required by 20.4.1.500 NMAC (incorporating 40 CFR §§264.111 and 264.178).

6.10. CLOSURE OF PERMITTED DISPOSAL UNITS

6.10.1. Panel Closure

The Permittees shall close each Underground HWDU in a manner that meets the closure standard for volatile organic compounds in Table 6.10.1, which represent health based levels (HBLs) at the location of the nearest permanent downwind resident beyond the WIPP site boundary. Upon completion of disposal in an Underground HWDU, the Permittees shall provide written notification to the Secretary stating the final volume of TRU mixed waste emplaced in the Underground HWDU. The Permittees shall also close the Underground HWDU as specified in Permit Attachment G and Permit Attachment G1 (WIPP Panel Closure Design Description and Specifications). The Permittees shall post a link to the final panel volume notice transmittal letter on the WIPP Home Page and inform those on the e-mail notification list as specified in Permit Section 1.11.
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CLOSURE PLAN

Introduction
This Permit Attachment contains the Closure Plan that describes the activities necessary to close the Waste Isolation Pilot Plant (WIPP) individual units and facility. Since the current plans for operations extend over several decades, the Permittees will periodically reapply for an operating permit in accordance with 20.4.1.900 NMAC (incorporating 40 CFR §270.10(h)). Consequently, this Closure Plan describes several types of closures. The first type is panel closure, which involves constructing closures in each of the underground hazardous waste disposal units (HWDUs) after they are filled. The second type is partial closure, which can be less than the entire facility and therefore less than an entire unit as described herein for the Waste Handling Building (WHB) Unit and the Parking Area Unit (PAU). The third type of closure is final facility closure at the end of the Disposal Phase, which will entail "clean" closure of all remaining surface storage units and construction of the four shaft seal systems. Finally, in the event a new permit is not issued prior to expiration of an existing permit, a modification to this Closure Plan will be sought to perform contingency closure. Contingency closure defers the final closure of waste management facilities such as the Waste Handling Building Container Storage Unit (WHB Unit), the conveyances, the shafts, and the haulage ways because these will be needed to continue operations with non-mixed Transuranic (TRU) waste.

The hazardous waste management units (HWMUs) addressed in this Closure Plan include the aboveground HWMU in the WHB, the parking area HWMU, and Panels 1 through 8, each consisting of seven rooms. In addition, this Closure Plan includes Panels 9 and 10 which are the main north-south entries in the underground, a portion of which may be used for waste disposal.

In addition, this Closure Plan includes closures for Panels 9 and 10.

This plan was submitted to the New Mexico Environment Department (NMED) and the U.S. Environmental Protection Agency (EPA) in accordance with 20.4.1.900 NMAC (incorporating 40 CFR §270.14(b)(13)). Closure at the panel level will include the construction of barriers that will contribute to limiting the emission of hazardous waste constituents from the panel into the mine ventilation air stream below levels that meet environmental performance standards and to mitigate the impacts of methane buildup and deflagration that may be postulated for some closed panels. The Post-Closure Plan (Permit Attachment H) includes the implementation of institutional controls to limit access and groundwater monitoring to assess disposal system performance. Until final closure is complete and has been certified in accordance with 20.4.1.500 NMAC (incorporating 40 CFR §264.115), a copy of the approved Closure Plan and

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1. The mechanism for air emissions prior to closure is different than the mechanism after closure. Prior to closure, volatile organic compounds (VOC) will diffuse through drum filters based on the concentration gradient between the disposal room and the drum headspace. These VOCs are swept away by the ventilation system, thereby maintaining a concentration gradient that is assumed to be constant. Hence, the VOCs in the ventilation stream are a function of the number of containers only. After closure, the panel air will reach an equilibrium concentration with the drum headspace and no more diffusion will occur. The only mechanism for release into the mine ventilation system is due to pressure that builds up in the closed panel. This pressure arises from the creep closure mechanism that is reducing the volume of the rooms and from the postulated generation of gas as the result of microbial degradation of organic material in the waste. Consequently, the emissions after panel closure are a direct function of pressurization processes and rates within the panel.
hazardous waste releases as described in Permit Attachment G3) and decontaminated as
necessary, and underground HWUUs that contain radioactive mixed waste will be closed in
accordance with the panel closure design described in this Closure Plan. Final facility closure,
however, will be redefined and a request for a time extension for final closure will be requested.
A copy of this Closure Plan will be maintained by the Permittees at the WIPP facility and at the
U.S. Department of Energy (DOE) Carlsbad Field Office. The primary contact person at the
WIPP facility is:

Manager, Carlsbad Field Office
U.S. Department of Energy
Waste Isolation Pilot Plant
P. O. Box 3090
Carlsbad, New Mexico 88221-3090
(575) 234-7300

G-1a Closure Performance Standard

The closure performance standard specified in 20.4.1.500 NMAC (incorporating 40 CFR
§264.111), states that the closure shall be performed in a manner that minimizes the need for
further maintenance; that minimizes, controls, or eliminates the escape of hazardous waste; and
that conforms to the closure requirements of §264.178 and §264.601. These standards are
discussed in the following paragraphs.

G-1a(1) Container Storage Units

Final or partial closure of the permitted container storage units (the Waste Handling Building
Unit and Parking Area Unit) will be accomplished by removing all waste and waste residues.
Indication of waste contamination will be based, among other techniques, on the use of
radiological surveys as described in Permit Attachment G3. Radiological surveys use very
sensitive radiation detection equipment to indicate if there has been a potential release of TRU
mixed waste, including hazardous waste components, from a container. This allows the
Permittees to indicate potential releases that are not detectable from visible evidence such as
stains or discoloration. Visual inspection and operating records will also be used to identify
areas where decontamination is necessary. Contaminated surfaces will be decontaminated until
radioactivity is below DOE-established radiological protection limits*. Once
surfaces are determined to be free of radioactive waste constituents, they will be tested
sampled for hazardous waste contamination. These surface decontamination activities will
ensure the removal of waste residues to levels protective of human health and the environment.
The facility is expected to require no decontamination at closure because any waste spilled or
released during operations will be contained and removed immediately. Solid waste
management units listed in Attachment K, Table K-4 will be subject to closure. In the event
portions of these units which require decontamination cannot be decontaminated, these portions
will be removed and the resultant wastes will be managed as appropriately.

*The free-release criteria for items, equipment, and areas is <20 dpm/100 cm² for alpha radioactivity and <200 dpm/100 cm² for beta-gamma radioactivity.
As indicated by the closure schedule presented in Figure G-3, the activities necessary to perform facility closure of the WIPP facility may require more than 180 days to complete because of additional stringent requirements for managing radioactive materials. Therefore, the Permit provides an extension of the 180-day final closure requirement in accordance with 20.4.1.500 NMAC (incorporating 40 CFR §264.113). During the extended closure period, the Permittees will continue to demonstrate compliance with applicable permit requirements and will take all steps necessary to prevent threats to human health and the environment as a result of TRU mixed waste management at the WIPP facility including all of the applicable measures in Permit Part 2.10 (Preparedness and Prevention).

In addition, according to the schedules in Figure G-3, the final derived wastes that are generated as the result of decontamination activities will not be disposed of for 16 months after the initiation of final facility closure. In accordance with 20.4.1.500 NMAC (incorporating 40 CFR §264.113(a)), the Permit provides an extension of the 90-day limit to dispose of final derived waste resulting from the closure process. This provision is necessitated by the fact that the radioactive nature of the derived waste makes placement in the WIPP repository the best disposition, and the removal of these wastes will, by necessity, take longer than 90 days in accordance with the closure schedules. During this extended period of time, the Permittees will take all steps necessary to prevent threats to human health and the environment, including compliance with all applicable permit requirements. These steps include all of the applicable preparedness and prevention measures in Permit Part 2.10 (Preparedness and Prevention).

Finally, in the event the hazardous waste permit is not renewed as assumed in the schedule, the Permittees will submit a modification to the Closure Plan to implement a contingency closure that will allow the Permittees to continue to operate for the disposal of non-mixed TRU waste. This modification will include a request for an extension of the time for final facility closure. This modified Closure Plan will be submitted to the NMED for approval.

If it becomes necessary to amend the Closure Plan for the WIPP facility, the Permittees will submit, in accordance with 20.4.1.900 NMAC (incorporating 40 CFR §270.42), a written notification of or request for a permit modification describing any change in operation or facility design that affects the Closure Plan. The written notification or request will include a copy of the amended Closure Plan for approval by the NMED. The Permittees will submit a written notification of or request for a permit modification to authorize a change in the approved plan, if:

- There are changes in operating plans or in the waste management unit facility design that affect the Closure Plan
- There is a change in the expected year of closure
- Unexpected events occur during panel or final facility closure that require modification of the approved Closure Plan
- Changes in State or Federal laws affect the Closure Plan
The Permittees will submit a written request for a permit modification with a copy of the amended Closure Plan at least 60 days prior to the proposed change in facility design or operation or within 60 days of the occurrence of an unexpected event that affects the Closure Plan. If the unexpected event occurs during final closure, the permit modification will be requested within 30 days of the occurrence. If the Secretary of the NMED requests a modification of the Closure Plan, a plan modified in accordance with the request will be submitted within 60 days of notification or within 30 days, if the change in facility condition occurs during final closure.

G-1e Closure Activities

Closure activities include those instituted for panel closure (i.e., closure of filled underground HWDUs), contingency closure (i.e., closure of surface HWMUs and decontamination of other waste handling areas), and final facility closure (i.e., closure of surface HWMUs, D&D of surface facilities and the areas surrounding the WHB, and placement of repository shaft seals). Panel closure systems will be emplaced to separate areas of the facility and to isolate panels. Permit Attachments G1 and G2 provide panel closure system and shaft seal designs, respectively. All closure activities will meet the applicable quality assurance (QA)/quality control (QC) program standards in place at the WIPP facility. Facility monitoring procedures in place during operations will remain in place through final closure, as applicable.

G-1e(1) Panel Closure

Following completion of waste emplacement in each underground HWDU, disposal-side ventilation will be established in the next panel to be used, and the HWDU panel containing the waste will be closed. A WIPP Panel Closure (WPC) panel closure system will be emplaced in the panel access drift, in accordance with the design in Permit Attachment G1 and the schedule in Figure G-2 and Table G-1. Alternatively, panels may be closed simultaneously by placing panel closures in the north-south mains (E-300, E-140, W-30, and W-170), as shown in Figure G-1. If this alternative is used to close Panels 3, 4, 5, and 6, then Panel 9 will not be used for TRU mixed waste disposal. The panel closure system is designed to meet the following requirements that were established by the DOE for the design to comply with 20.4.1.500 NMAC (incorporating 40 CFR §264.601(a)):

- the panel closure system shall contribute to meeting the closure performance standards in Permit Part 6, Section 6.10.1 by mitigating the migration of volatile organic compounds (VOCs) from closed panels
- the panel closure system shall consider potential flow of VOCs through the disturbed rock zone (DRZ) in addition to flow through closure components
- the panel closure system shall perform its intended functions under loads generated by creep closure of the tunnels
- the panel closure system shall perform its intended function under the conditions of a postulated thermal runaway involving nitrate salt bearing waste [Order 2006]

methane explosion
Panel. Emissions from the closed panel occur at a rate determined by gas generation within the waste and creep closure of the panel.

Figures G-4 and G-5 show a diagram of the panel closure design, the substantial barriers, and installation envelopes. Permit Attachment G1 provides the detailed design and the design analysis for the panel closure system. Although the permit application proposed several panel closure design options, depending on the gas generated by wastes and the age of the mined openings, the NMED and EPA determined that only the most robust design option (D) would be approved. This decision does not prevent the Permittees from continuing to collect data on the behavior of the wastes and mined openings, or proposing a modification to the Closure Plan in the future, using the available data to support a request for reconsideration of one or more of the original design options. If a design different from Option D as defined in Permit Attachment G1 is proposed, the appropriate permit modification will be sought. The Permittees shall use bulkheads as specified in Attachment G1 for the closure of filled panels. A run-of-mine (ROM) salt component will be included in the closure for Panel 9 and Panel 10. The substantial barrier in Figure G-4a will be installed in Panels 7 and 8.

G-1e(2) Prerequisite Activities for Panel 6 Final Closure

The NMED-approved WIPP Nitrate Salt Bearing Waste Container Isolation Plan (DOE, 2015) provides for performing prerequisite activities associated with ground control, equipment readiness, work control authorization, and ventilation prior to construction of the final closure in Panel 6. These activities are considered closure activities and will be completed in accordance with the WIPP Nitrate Salt Bearing Waste Container Isolation Plan (DOE, 2015).

G-1e(3) Decontamination and Decommissioning

Decontamination is defined as those activities which are performed to remove contamination from surfaces and equipment that are not intended to be disposed of at the WIPP facility. The policy at the WIPP facility will be to decontaminate as many areas as possible or to fix the contaminants to the surface so they are not easily removable, consistent with radiological protection policy. Decontamination or fixing are a necessary activity in the clean closure of the surface container management units. Decontamination or fixing determinations are based upon radiological and hazardous-constituent surveys.

Decommissioning is the process of removing equipment, facilities, or surface areas from further use and closing the facility. 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. Passive institutional controls are not included in the Permit.

The objective of D&D activities at the WIPP facility is to return the surface to as close to the preconstruction condition as reasonably possible, while protecting the health and safety of the public and the environment. Major activities required to accomplish this objective include, but are not limited to the following:

1. Review of operational records for historical information on releases
2. Visual examination of surface structures for evidence of spills or releases
3. Performance of site contamination surveys

4. Decontamination, if necessary, of usable equipment, materials, and structures including surface facilities and areas surrounding the WHB.

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

6. Emplacement of final-panel closure system in the last HWDU

7. Emplacement of shaft seals

8. Regrading the surface to approximately original contours

9. Initiation of active controls

This Closure Plan will be amended prior to the initiation of final closure activities to specify the methods to be used.

Health and Safety

Before final closure activities begin, radiation protection health physics personnel will conduct a hazards survey of the unit(s) being closed. A release of radionuclides could also indicate a release of hazardous constituents. If radionuclides are not detected, sampling for hazardous constituents will still be performed if there is documentation or visible evidence that a spill or release has occurred. The purpose of the hazards survey will be to identify potential contamination concerns that may present hazards to workers during the closure activities and to specify any control measures necessary to reduce worker risk. This survey will provide the information necessary for the health physics personnel to identify worker qualifications, personal protective equipment (PPE), safety awareness, work permits, exposure control programs, and emergency coordination that will be required to perform closure related activities.

G-1e(32)(a) Determine the Extent of Contamination

The first activities performed as part of decontamination include those needed to determine the extent of any contamination that needs to be removed or fixed prior to decommissioning a facility. This includes activities 1 to 3 above and, as can be seen by the schedules in Figures 6.1 and 6.2, these surveys are anticipated to take 10 months to perform, including obtaining the results of any sample analyses. The process of identifying areas that require decontamination of fixing include three sources of information. First, operating records will be reviewed to determine where contamination has previously been found as the result of historical releases and spills. Even though releases and spills in the above ground storage units will have been cleaned up at the time of occurrence, newer equipment and technology may allow further cleaning. Second, surfaces of facilities and structures will be examined visually for evidence of spills or releases. Finally, extensive detailed contamination surveys will be performed to document the level of cleanliness for all-surface structures and

4 For the purposes of planning, the conclusion of shaft sealing is used by the DOE as the end of closure activities and the beginning of the Post-Closure Care Period.
equipment that are subject to decontamination. If equipment or areas are identified as contaminated, the Permittees will notify NMED as specified in Permit Part 1, and a plan and procedure(s) will be developed and implemented to address decontamination-related questions, including:

- Should the component be decontaminated or disposed of as waste?
- What is the most cost-effective method of decontaminating the component?
- Will the decontamination procedures adequately contain the contamination?

Radiological and hazardous constituent surveys will be used in determining the presence of hazardous waste and hazardous waste residues in areas where spills or releases have occurred. Radiological surveys are described in Permit Attachment G3. For contamination that is cleaned up, once cleanup of the radioactivity has been completed, the surface will be sampled for hazardous constituents specified in Permit Attachment B to determine that they, too, have been cleaned up. Sampling and analysis protocols will be consistent with EPA's document SW-846 (EPA, 1996).

G-1e(32)(b) Decontamination Activities

Once the extent of contamination is known, decontamination or fixing activities will be planned and performed. Radiological control and the control of hazardous waste residues are the primary criteria used in the design of decontamination activities. Radiological/radiation control procedures require that careful planning and execution be used in decontamination activities to prevent the exposure of workers beyond applicable standards and to prevent the further spread of contamination. Careful control of entry, cleanup, and ventilation are vital components of radiological/radiation decontamination. The level of care mandated by DOE orders and occupational protection requirements results in closure activities that will exceed the 180 days allowed in 20.4.1.500 NMAC (incorporating 40 CFR §264.113(b)). Decontamination activities are included as item 4 above and are shown on the schedules for contingency closure and final facility closure (Figures G-2 and G-3). The activities are anticipated to have a duration of 20 months for both contingency closure and for final facility closure. The result of these activities is the clean closure of the surface container management units. Under contingency closure, the other areas that have been decontaminated will not be closed. Instead they will remain in use for continued waste management activities involving non-mixed waste. Under final facility closure, other areas that are decontaminated are eligible for closure.

The “Start Clean—Stay Clean” operating philosophy of the WIPP Project will provide for minimum need for decontamination. However, the need for decontamination techniques may arise.

The operating philosophy of the WIPP Project, which is described as “Start Clean – Stay Clean”, will provide for minimum need for decontamination. However, the need for decontamination techniques may arise.

Decontamination activities will be coordinated with closure activities so that areas that have been decontaminated will not be recontaminated. All waste resulting from decontamination activities will be surveyed and analyzed for the presence of radioactive contamination and determination of hazardous constituents specified in Permit Attachment B. The waste will be characterized as hazardous, mixed, or radioactive and will be packaged and handled.
appropriately. Mixed and radioactive waste may be classified as TRU mixed waste will be managed in accordance with the applicable Permit requirements. Derived mixed waste collected during decontamination activities that are generated before repository shafts have been sealed will be emplaced in the facility, if appropriate, or will be managed together with decontamination derived waste collected after the underground is closed. This waste will be classified and shipped off site to an appropriate, permitted facility for treatment, if necessary, and for disposal.

**Removal of Hazardous Waste Residues**

Because of the type of waste management activities that will occur at the WIPP facility, waste residues that may be encountered during the operation of the facility and at closure may include derived waste. Derived wastes result from the management of the waste containers or may be collected as part of the closure activities (such as those during which wipes were used to sample the containers and equipment for potential radioactive contamination or those involving solidified decontamination solutions, the handling of equipment designated for disposal, and the handling of residues collected as a result of spill cleanup). Derived wastes collected during the operation and closure of the WIPP facility will be identified and managed as TRU mixed wastes. These wastes will be disposed in the active underground HWDU. Decontamination and decommissioning derived wastes and equipment designated for disposal will be placed in the last underground HWDU panel before closure of that unit.

**Surface Container Storage Units**

The procedures employed for waste receipt at the WIPP facility minimize the likelihood for any waste spillage to occur on the surface outside the WHB. TRU mixed waste is shipped to the WIPP facility in approved shipping containers (i.e., Contact-Handled or Remote-Handled Packages) that are not opened until they are inside the WHB. Therefore, it is unlikely that soil in the Parking Area Unit or elsewhere in the vicinity of the WHB will become contaminated with TRU mixed waste constituents as a result of TRU mixed waste management activities. An evaluation of the soils in the vicinity of the WHB will only be necessary if a documented event resulting in a release of hazardous waste has occurred outside the WHB.

The "Start Clean—Stay Clean" operating philosophy of the WIPP Project will minimize the need for decontamination of the WHB during decommissioning and closure. Procedures for opening shipping containers in the WHB limit the opportunity for waste spillage.

Should the need for decontamination of the WHB arise, the following methods may be employed, as appropriate, for the hazardous constituent/contaminant type and extent:

- Chemical cleaning (e.g., water, mild detergent cleanser, and polyvinyl alcohol)
- Nonchemical cleaning (e.g., sandblasting, grinding, high-pressure water spray, scabbler pistons and needle scalers, ice-blast technology, dry-ice blasting)
- Removal of contaminated components such as pipe and ductwork
Waste generated as a result of WHB decontamination activities will be managed as derived waste in accordance with applicable permit requirements and will be emplaced in the last open underground HWDU for disposal.

Waste Handling Equipment and

The waste shaft conveyance and associated waste handling equipment will be decontaminated to background or be disposed as derived waste as part of both contingency and final facility closure. Procedures for detection and sampling will be as described above. Equipment cleanup will be as above using chemical or nonchemical techniques.

Personnel Decontamination

Personal protective equipment (PPE) worn by personnel performing closure activities in areas determined to be contaminated will be disposed of appropriately. Disposable PPE used in such areas will be placed into containers and managed as TRU mixed waste. Non-disposable PPE will be decontaminated, if possible. Non-disposable PPE that cannot be decontaminated will be managed as TRU mixed waste.

In accordance with DOE policy, TRU mixed waste PPE will be considered to be contaminated with all of the hazardous waste constituents contained in the containers that have been managed within the unit being closed. Wastes collected as a result of closure activities and that may be contaminated with radioactive and hazardous constituents will be considered TRU mixed wastes. These wastes will be managed as derived wastes, as described in Permit Attachment A2. Such waste, collected as the result of closure of the WIPP facility, will be disposed of in the final open underground HWDU.

Cleanup Criteria

Radiological Radiation decontamination will be less than or equal to the following levels, or to whatever lesser levels that may be established by DOE ORNL at the time of cleanup:

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<thead>
<tr>
<th>Contamination Type</th>
<th>Loose</th>
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<tr>
<td>alpha contamination (α)</td>
<td>20 dpm/100 cm²</td>
<td>500 dpm/100 cm²</td>
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<td>beta-gamma contamination (β-γ)</td>
<td>200 dpm/100 cm²</td>
<td>1000 dpm/100 cm²</td>
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Hazardous waste decontamination will be conducted in accordance with standards in 20.4.1.500 NMAC (incorporating 40 CFR §264) or as incorporated into the Permit.

Final Contamination Sampling and Quality Assurance

Verification samples will be analyzed by an approved laboratory that has been qualified by the DOE according to a written program with strict criteria. The QA requirements of EPA/SW-846...
References


Technical Information Center of the U. S. Department of Energy, Oak Ridge, TN.

DOE, see U. S. Department of Energy

EPA, see U. S. Environmental Protection Agency


NOTES

1. Configuration and placement of the substantial barrier and the bulkhead dictated by as-found (i.e., conditions as designated by the cognizant engineer).

2. Substantial barrier material will consist of run-of-rain salt or other suitably non-flammable material as designated by the cognizant engineer.

3. Substantial barrier material tacked against the waste face. The height of the substantial barrier near the waste will be at least equal to the height of the bottom of the top run of waste.

4. Dimensions indicated are maximum. The height of the substantial barrier is measured at the waste face. The length of the substantial barrier is measured from the bottom of the waste face to the top of the substantial barrier material.

Figure G-4a
Typical Substantial Barrier and Bulkhead