

WP 05-WH1011

Revision 23

CH Waste Processing

Technical Procedure

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Mark Dziamski

APPROVED FOR USE

CONTINUOUS USE PROCEDURE

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INTRODUCTION ^{1, 2, 3, 4, 5}

This procedure provides instructions for unloading contact-handled (CH) packages which consist of the transuranic (TRU) package transporter (TRUPACT-II or HalfPACT) shipping container, for downloading and placing of waste packages, and emplacing backfill in underground (U/G) disposal area. The following records are generated as a result of performing this procedure:

- Attachment 1 - CH Waste Processing Data Sheet
- Attachment 3 - Stacking of Multiple Payloads
- Attachment 4 - Waste Emplacement Report Data Sheet
- Attachment 5 - CH Waste Storage Area Capacity
- Attachment 6, MgO Emplacement Report Data Sheet
- Underground Emplacement Map

REFERENCES

BASELINE DOCUMENTS

- 30 CFR §57.5015, "Oxygen Deficiency"
- 40 CFR Part 761, "Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions"
- NRC-Docket-71-9218, *Certificate of Compliance for the TRUPACT-II Package*
- NRC-Docket-71-9218, *TRUPACT-II Safety Analysis Report for the TRUPACT-II Shipping Package*
- NRC-Docket 71-9279, *Certificate of Compliance for the HalfPACT*
- NRC-Docket 71-9279, *Safety Analysis Report for the HalfPACT Shipping Package*
- Contact Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC)
- Hazardous Waste Facility Permit, Waste Isolation Pilot Plant, Permit No. NM4890139088-TSDF, issued by the New Mexico Environment Department
- DOE/WIPP 02-3183, *CH Packaging Program Guidance*

- DOE/WIPP 95-2065, *Waste Isolation Pilot Plant Contact-Handled (CH) Documented Safety Analysis*
- DOE/WIPP 95-2125, *Waste Isolation Pilot Plant Contact-Handled (CH) Technical Safety Requirements*
- *Model TVA-1000B Instruction Manual*
- *Multi-Gas Monitor Instruction Manual*
- *Sampling Pump Instruction Manual*

REFERENCED DOCUMENTS

- DOE/CBFO 97-2273, *WIPP Waste Information System User's Guide*
- DOE/WIPP 02-3184, *CH Packaging Operations Manual*
- DOE/WIPP 02-3220, *CH Packaging Operations for High-Wattage Waste at LANL*
- WP 05-WH1101, Surface Transuranic Mixed Waste Handling Area Inspections
- | ● WP 05-WH1412, 6-Ton Toyota Forklifts 52-H-033 & 52-H-126
- | ● WP 05-WH1603, CH TRU Underground Transporter, 52-H-008A & B
- WP 05-WH1810, Underground Transuranic Mixed Waste Disposal Area Inspections
- WP 05-WH4401, Waste Handling Operator Event Response
- WP 08-NT3020, TRU Waste Receipt
- WP 12-HP1100, Radiological Surveys
- WP 12-HP4000, Emergency Radiological Control Responses

EQUIPMENT

- Dry cloths
- Water
- Brushes
- Ladder
- Payload tie-down assembly
- Multi-gas monitor
- Flame ionization detector
- Sampling pump

PRECAUTIONS AND LIMITATIONS

NOTE

Waste Isolation Pilot Plant (WIPP) Waste Information System (WWIS) and container identification (ID) number verification can be performed during contamination surveys.

- Only personnel qualified as Waste Handling Technician/Engineer (WHT/WHE), or trainees operating under direct supervision of qualified WHT/WHE, are authorized to perform waste handling activities specified in this procedure.
- Waste shall not be stored on a pallet in the TRUDOCK storage area when waste handling is not in progress.
- If waste handling activities are suspended or interrupted, the Transportation Engineer (TE) shall be contacted.
- Abnormal events that require cessation of this procedure, such as a radiological event, must be performed in accordance with WP 05-WH4401 and WP 12-HP4000.
- If procedure cannot be performed as written, WHE shall be contacted.
- Failure to rotate the counterweights on the Adjustable Center of Gravity Lift Fixture (ACGLF) to the balance position may cause ACGLF to swing uncontrollably, resulting in equipment damage or personnel injury.
- Inner Containment Vessel (ICV) or Outer Containment Vessel (OCV) lock rings shall not be rotated with mechanical force.
- Waste is not to be placed in off-normal storage area of Waste Handling Building (WHB) without permission of Waste Operations Manager. If a condition exists that will cause an overflow of waste in the normal storage area(s), waste handling shall be stopped and WHE, Central Monitoring Room Operator (CMRO), and Waste Handling Manager (WHM) contacted.
- TRUPACT-II must be ventilated to >20 percent oxygen level before entry into ICV body if backfilled with inert gas.
- For high-wattage waste drums, or Controlled Waste, 24 hours is the maximum time between the date/time that shipment is received at WIPP and the date/time that ICV is vented.
- TE may be notified at any time that container ID numbers match WWIS Shipment Summary Report.

- At any point during waste processing, the TRUPACT-II lids can be positioned back onto the TRUPACT body to maintain appropriate equipment configuration, as determined by the WHE.
- Steps 2.5.31 and 5.4 can be performed at any time during the performance of this procedure.
- If discrepancies are found while processing the CH Packaging, the WHE shall be notified. The WHE shall then notify the Maintenance Engineer (ME) of the discrepancy.
- If a shipment is to be returned to generator site, DOE/WIPP 02-3184, Subsection 2.16, Loading Payload Assembly, must be performed.
- Waste containers shall not be stored in the WHB for longer than 60 days.
- Metal tools must not be used to remove O-rings.
- OCV-ICV lids shall be removed using a straight (vertical) pull; side pulls are not permitted.
- In the event waste handling activities will be performed on the back-shift (or off-shift), WHM or WHE must contact the Facility Shift Manager to assess the need for additional fire fighting capabilities. Concurrent activities during waste handling, such as equipment maintenance, waste receipt, construction activities, abnormal hoisting activities, and equipment used during these activities, including surface mining equipment, may indicate the need to evaluate the possibility for additional firefighting capabilities. This will be assessed on a case-by-case basis.
- Jack stands are required on freestanding trailers only when loading/unloading packaging on the trailer.
- WHE must enter shipment arrival date into the WWIS prior to emplacement.
- Prerequisite Action 3.0 can be performed at any time during the performance of this procedure.
- If shipment **DOES NOT** contain high-wattage waste or Controlled Waste, WHE must use the WWIS Shipment Summary Report and schedule CH package unloading based on ICV closure date to ensure that the 60-day U.S. Nuclear Regulatory Commission venting requirement and/or 59-day New Mexico Environment Department inspection requirement are not exceeded.
- If automatic fire suppression system becomes inoperable with waste on the equipment, the waste shall be placed in a safe condition, the WHE shall be notified, and a fire watch shall be posted.

- In the event CH waste handling activities will be performed on the back-shift (or off-shift), WHE must ensure that applicable equipment preoperational inspections and area inspections have been completed and CH TSR staffing met in order to continue CH waste handling operations.

PREREQUISITE ACTIONS

NOTE

The package unloading operation shall only be performed in a dry environment. In the event of precipitation during outdoor unloading or loading operations, OCV and ICV cavities shall be covered to prevent precipitation from entering the interior cavities. If precipitation does enter interior cavities, all freestanding water shall be removed before shipment, and liquid handled according to the site's waste management procedures.

NOTE

Transport trailer operations, package loading and unloading from transport trailers, hoisting and rigging activities such as ACGLF operations, equipment checkout and shutdown, and component inspection activities must be performed, but may be performed in any order and in parallel with other activities as long as radiological control steps are not bypassed. Steps involving outer containment assembly (OCA)/ICV lid removal/installation and payload removal/loading may be performed in parallel if there are multiple operators working on the same packaging.

- 1.0 WHE, record OCA body serial number on Attachments 1 and 4, and shipment number on Attachment 1.

SIGN-OFF

- 2.0 WHE, verify TE has validated shipping documents, inspected CH packages for damage, and released CH packages for unloading.

SIGN-OFF

- 3.0 Verify, on Attachment 1, that the shipment arrival date is entered into WWIS.

SIGN-OFF

- 4.0 WHE, obtain WWIS Shipment Summary Report.
- 5.0 If shipment contains high-wattage waste, obtain DOE/WIPP 02-3220, Attachment 10, Time and Date Data Sheet for Receipt of High-Wattage waste, from TE.
- 6.0 If shipment contains Controlled Waste, obtain WP 08-NT3020, Attachment 3, WIPP Controlled Checklist for Controlled Shipments, from TE.

- 7.0 Verify applicable section of WP 05-WH1101, and/or applicable section of WP 05-WH1810, has been completed.
- 8.0 Verify applicable equipment preoperational inspections have been completed.
- 9.0 If the ICV body was backfilled with inert gas for the current shipment, perform the following:
- [A] WHE, verify oxygen monitor serial number and due date.
- SIGN-OFF or N/A**
- [B] WHE, verify oxygen monitor daily calibration and sample pump operational check is complete.
- SIGN-OFF or N/A**
- 10.0 Configure TRUDOCK position to facilitate operations for specific type of CH package, if required.

PERFORMANCE

1.0 TRAILER HANDLING AND UNLOADING

CAUTION

A physical check shall be made to verify air bags on the trailer have fully inflated before trailer is moved. Failure to do so may cause tires to rub on the bottom of the rear CH package. The trailer must be kept as level as possible during movement.

- 1.1 Position transport trailer in a designated area.
- 1.2 Lower trailer jacks (landing gear), ensuring trailer is level.
- 1.3 Install wheel chocks.
- 1.4 Install trailer stands on freestanding trailers.
- 1.5 Prepare CH package for removal as follows:
- 1.5.1 Release tie-downs from packaging.
- 1.5.2 Rotate four forklift pocket covers to UP position, or remove four covers and store in a designated area.

NOTE

The maximum CH surface storage capacity for the TRUDOCK staging area is the contents of four CH packages, without the shipping container lids removed, or a maximum volume of 15m³.

- 1.6 **IF** moving a TRUPACT containing a direct-loaded ten-drum overpack (TDOP) to the TRUDOCK storage, or if a direct-loaded TDOP is currently at the TRUDOCK storage area,
THEN perform Section 1 of Attachment 5.

NOTE

Only clean and dry CH packages are allowed in the CH Bay.

- 1.7 If required, clean and dry CH package before transferring into WHB, using the following methods:
- Wipe with dampened cloths
 - Brush with water

CAUTION

Forklift tip-back beyond level may damage CH package exterior surface.

- 1.8 Transfer CH package to unloading area.

- 1.9 Lower TRUDOCK doors and close/latch TRUDOCK gates.

2.0 CH PACKAGE UNLOADING

- 2.1 WH, verify adequate Waste Handling Operations (WHO) staff is available to support CH waste processing.

SIGN-OFF

- 2.2 WH, verify WHB is configured for waste handling mode.

SIGN-OFF

- 2.3 OCA Lid Removal

- 2.3.1 Remove and dispose of the security seals.

- 2.3.2 If seal is broken or missing, contact WHE.

2.3.3 Remove the following components to prepare OCA lid for removal:

- OCA lid lift pocket covers, if not previously removed
- OCA test-port access plug and thermal plug
- OCA vent port access plug and thermal plug
- OCA lock ring bolts (6)

NOTE

If OCA lid is turned so that the OCA test port plug is not accessible, Step 2.3.4 cannot be performed, and Operator must proceed to Step 2.3.5.

2.3.4 Verify OCV seal test-port plug is fully seated.

2.3.5 Remove OCV vent port cover.

NOTE

Torque on OCV vent port plug may be relieved prior to installation of OCV vent port tool.

2.3.6 Install OCA vent port tool.

2.3.7 Retrieve OCV vent port plug into vent port tool.

2.3.8 Connect vacuum line to vent port tool.

2.3.9 Start vacuum pump and evacuate 3-in. to 15-in. Hg vacuum gauge.

2.3.10 Rotate OCV lock ring to "UNLOCKED" position.

2.3.11 Stop vacuum pump.

2.3.12 Disconnect vacuum line to vent port tool.

2.3.13 Remove vent port tool.

CAUTION

To prevent weight from shifting, Operator shall verify two ACGLF counterweights are at 180 degrees and 000 degrees (+/- 2 degrees) **BEFORE** lifting ACGLF or lid.

2.3.14 Attach ACGLF to OCA lid.

CAUTION

To avoid shearing of lid lift pins, load cell reading **MUST NOT** exceed 7,500 lb when weight of ACGLF is zeroed out, or 10,000 lb when weight of ACGLF is included.

2.3.15 Perform the following:

[A] **SLOWLY** raise OCA lid approximately six inches above the top of the ICV lid, or as directed by Radiological Control Technician (RCT).

[B] RCT, perform dose rate survey as OCA lid is being raised.

2.3.16 **IF** the OCA lid does not lift off, **THEN** perform the following:

[A] Contact WHE.

[B] **GO TO** DOE/WIPP 02-3184, Subsection 3.2 or Subsection 3.3, attempt to remove lid, and return to Step 2.3.17.

NOTE

At the discretion of the RCT, Step 2.3.17 may be performed after Step 2.3.18.

2.3.17 RCT, perform contamination smears of OCA lid interior surface and ICV lid exterior surface.

2.3.18 Place OCA lid on storage stand.

2.3.19 RCT, monitor smears for gross levels of activity.

2.4 ICV Lid Removal

CAUTION

To prevent weight from shifting, Operator shall verify the two ACGLF counterweights are located at 180 degrees and 000 degrees (+/- 2 degrees) **BEFORE** lifting the ACGLF or lid.

- 2.4.1 Attach ACGLF to ICV lid.
- 2.4.2 Remove ICV vent port cover.
- 2.4.3 Remove the following:
 - ICV outer vent port plug
 - ICV lock ring bolts (3)
 - ICV seal test-port plug
 - OCV seal test-port plug

WARNING

ICV vent port plug **MUST NOT** be removed if torque is relieved prior to installing ICV vent port tool. Plug removal may result in contamination of personnel and area.

NOTE

Torque on ICV inner vent port plug may be relieved prior to installation of ICV vent port tool.

- 2.4.4 Install ICV vent port tool.
- 2.4.5 Install a radiological assessment filter (RAF) assembly onto ICV vent port tool.
- 2.4.6 Connect vacuum hose to RAF.
- 2.4.7 Retrieve ICV inner vent port plug into ICV vent port tool.

CAUTION

Vacuum should not exceed 15-in. Hg when attempting to open ICV.

- 2.4.8 Start vacuum pump and evacuate 3-in. to 15-in. Hg vacuum gauge.
- 2.4.9 If shipment contains high-wattage waste drums, **GO TO** DOE/WIPP 02-3220, Attachment 10, and record ICV vented date and time.
- 2.4.10 WHE, for high-wattage waste shipments, verify the 24-hour venting time from waste receipt to ICV venting was met, and sign and date DOE/WIPP 02-3220, Attachment 10.
- 2.4.11 If shipment contains Controlled Waste, **GO TO** WP 08-NT3020, Attachment 3, and record ICV vented date and time.
- 2.4.12 WHE, for Controlled Waste shipments, verify the 24-hour venting time from waste receipt to ICV venting was met, and sign and date WP 08-NT3020, Attachment 3.
- 2.4.13 Rotate ICV lock ring to "UNLOCKED" position.
- 2.4.14 Stop vacuum pump.
- 2.4.15 Disconnect vacuum line from RAF Assembly.
- 2.4.16 Remove RAF assembly from ICV vent port tool.
- 2.4.17 RCT, perform contamination smear of RAF assembly quick connect.
- 2.4.18 RCT, monitor smear and RAF for gross levels of activity.

NOTE

At the discretion of the RCT, Step 2.4.27 may be performed immediately after Step 2.4.18.

- 2.4.19 RCT, place filter in Alpha-6 monitor with no flow, or into an equivalent instrument.
- 2.4.20 RCT, let filter count for at least five minutes.
- 2.4.21 RCT, examine spectrum for TRU activity.

- 2.4.22 RCT, if there is observable TRU activity, notify WHM, CMRO, and **STOP** waste processing on affected TRUDOCK positions.

NOTE

Additional RAF samples may be taken as directed by WHM to determine TRU activity.

- 2.4.23 RCT, record the following on Attachment 2, Radiological Survey Report, Section B, of WP 12-HP1100:

- Time
- Pu²³⁹ cpm (counts per minute)
- Peak channel or peak energy, as applicable

NOTE

In Step 2.4.24 below, the smears were taken at Step 2.3.17 on OCA lid interior surface and ICV lid exterior surface, and at Step 2.4.17 on RAF quick connect.

- 2.4.24 RCT, verify activity on smears and RAF is below acceptable limits.

SIGN-OFF

- 2.4.25 RCT, verify continuous air monitor (CAM) is operating properly.
- 2.4.26 Remove ICV vent port tool and ICV inner vent port plug.
- 2.4.27 If not previously completed, install CAM head and vent hood system.
- 2.4.28 Verify air flows into vent hood.

CAUTION

To avoid shearing of lid lift pins, load cell reading **MUST NOT** exceed 5,000 lb when weight of ACGLF is zeroed out, or 7,500 lb when weight of ACGLF is included.

2.4.29 Perform the following:

- **SLOWLY** raise ICV lid to clear ICV body, and hold it approximately two feet above the top of ICV body flange, or as directed by RCT.
- RCT, perform dose rate survey as ICV lid is being raised.

2.4.30 **IF** ICV lid does not lift off,
THEN perform the following:

- [A] Contact WHE.
- [B] **GO TO** DOE/WIPP 02-3184, Subsection 3.2 or Subsection 3.3, attempt to remove the lid, and return to Step 2.4.31.

2.4.31 RCT, perform contamination smears of ICV lid interior and top of payload.

2.4.32 RCT, monitor smears for gross levels of activity.

2.4.33 RCT, verify activity on smears is below acceptable limits.

SIGN-OFF

NOTE

Step 2.4.34 can be performed concurrently with Step 2.4.35.

2.4.34 WHE, **IF** ICV body was backfilled with inert gas for the current shipment,
THEN perform a TRUPACT-II walk-around measurement verifying that the oxygen concentration is >20 percent in the worker breathing zone.

SIGN-OFF or N/A

2.4.35 Remove vent hood system and CAM head.

2.4.36 Place ICV lid on storage stand.

2.5 Unloading Payload Assembly

2.5.1 RCT, perform smears of the guide tubes, Standard Waste Box (SWB), or TDOP connecting devices, and SWB ratchet straps.

2.5.2 RCT, monitor smears for gross levels of activity.

CAUTION

To prevent weight from shifting, Operator shall verify that the two ACGLF counterweights are located at 180 degrees and 000 degrees (± 2 degrees) **BEFORE** lifting the ACGLF or payload.

2.5.3 Attach ACGLF with appropriate legs/adaptor to payload.

NOTE

If no predetermined settings are on payload, settings default to 180 degrees/000 degrees.

2.5.4 Position ACGLF counterweights to predetermined positions as marked on top of payload.

2.5.5 RCT, verify activity on smears of guide tubes, SWB or TDOP connection devices, and SWB ratchet straps is below acceptable limits.

SIGN-OFF

NOTE

Steps 2.5.6 through 2.5.11 are performed concurrently to remove the payload.

NOTE

ACGLF indicated balance should be monitored and the counterweights adjusted as needed.

2.5.6 Raise payload assembly slowly.

2.5.7 RCT, perform dose rate survey of the payload.

2.5.8 Visually inspect payload for damage.

SIGN-OFF

NOTE

At the discretion of the RCT, Step 2.5.9 may be performed after Step 2.5.18.

2.5.9 RCT, perform contamination smears on areas of payload assembly not previously accessible, such as lower SWB seals, and upper and lower layer of 14-pack drums.

2.5.10 **IF** payload is damaged,
THEN notify WHE.

[A] WHE, if damage is found, document decision for disposition of containers in the logbook and proceed as directed by the WHM.

NOTE

If a payload has a dunnage assembly, containers are only required to have a dunnage or empty label affixed. Specific dunnage container ID numbers found on the WWIS Shipment Summary Report are not required to be verified. Dunnage assemblies must be confirmed by the absence of radionuclides and hazardous materials information on the Shipment Summary Report.

NOTE

If there is a discrepancy in WWIS and container ID numbers, the payload (in CH packaging, or on a facility pallet) should be placed in a shielded storage room. Step 2.5.24 should be performed only if placing a facility pallet into the shielded storage room.

2.5.11 Scan a waste container in each of the payload assemblies using WWIS bar code reader in accordance with DOE/CBFO 97-2273.

2.5.12 **IF** WWIS bar code reader is not operational,
THEN visually verify all visual payload container alpha/numeric numbers against WWIS Shipment Summary Report.

2.5.13 Circle appropriate results for container alpha/numeric number status, and initial Attachment 1.

SIGN-OFF

2.5.14 Notify TE that container ID alpha/numeric numbers match WWIS Shipment Summary Report.

2.5.15 **IF** the container ID alpha/numeric numbers **DO NOT** match WWIS Shipment Summary Report,
THEN, WHE, notify the CMRO, TE, WHM, and Site Environmental Compliance Manager of discrepant load.

- 2.5.16 RCT, perform contamination smears of payload bottom.
- 2.5.17 Move payload assembly to facility pallet.
- 2.5.18 RCT, perform contamination smears of ICV interior.
- 2.5.19 RCT, perform Step 2.5.9 if not previously performed.
- 2.5.20 RCT, monitor smears for gross levels of activity.

NOTE

The maximum CH surface storage capacity for the shielded storage area is one fully loaded facility pallet, or a maximum volume of 7.5 m³.

- 2.5.21 If placing a facility pallet into the shielded storage room, perform the following:
 - Conduct a surface area inspection of the shielded storage room.
 - Verify volume calculations are not exceeded by completing Attachment 5, Section 3.
- 2.5.22 Perform one of the following:
 - [A] If waste shipment contains Polychlorinated Biphenyls (PCBs), verify waste containers are labeled with a PCB warning label and initial Attachment 1.
 - [B] If waste shipment does not contain PCBs, on Attachment 1 circle N/A and initial.

SIGN-OFF or N/A

- 2.5.23 **IF** handling SWBs and slip sheet installation is required, **THEN** perform the following:
 - [A] Remove ratchet straps.
 - [B] Raise upper SWB.
 - [C] RCT, perform contamination smears on newly exposed areas of SWB (if applicable).
 - [D] Install slip sheet.
 - [E] Lower SWB.
 - [F] RCT, monitor smears for gross levels of activity.

- 2.5.24 RCT, verify activity on smears of bottom of payload and ICV interior performed in Steps 2.5.16 and 2.5.18 are below acceptable limits.

SIGN-OFF

- 2.5.25 RCT, verify activity on smears of upper and lower areas of payload assembly and newly exposed areas of SWB (if applicable) is below acceptable limits as performed in Step 2.5.9 and Step 2.5.23.

SIGN-OFF

- 2.5.26 Remove guide tubes (if applicable).

- 2.5.27 **IF** dunnage is removed,
THEN RCT:

- [A] Perform contamination smears of newly exposed area of payload.
- [B] Monitor smears for gross levels of activity.
- [C] Verify activity on smears is below acceptable limits.

SIGN-OFF or N/A

NOTE

Criticality Safety Administrative Control: Waste shall be stored in the WHB no greater than two drums or two boxes high.

- 2.5.28 **IF** required to move/stack payloads in the CH Bay,
THEN perform the following:

- [A] When stacking payloads, record required information on Attachment 3 and initial Attachment 1.
- [B] Inspect payloads to be moved.
- [C] Remove tie-down assembly (if necessary).
- [D] Stack payloads per Attachment 3.
- [E] RCT, perform dose rate survey of the payload.

SIGN-OFF or N/A

2.5.29 RCT, if newly exposed area of payload pallet/payload exists, perform the following:

- [A] Contamination smears of newly exposed area of payload pallet/payload.
- [B] Monitor smears for gross levels of activity.
- [C] Verify activity on smears is below acceptable limits.

SIGN-OFF or N/A

- 2.5.30 Secure payload assembly to facility pallet with tie-down assembly.
- 2.5.31 Performers of procedure, enter printed name, signature, date, and initials on Attachment 1.
- 2.5.32 WHE, copy DOE/WIPP 02-3220, Attachment 10 (if applicable).
- 2.5.33 WHE, copy WP 08-NT3020, Attachment 3 (if applicable).
- 2.5.34 Secure Attachments 1 and 4 to payload.

NOTE

The maximum CH surface storage capacity for the northeast corner is seven fully loaded pallets, one facility pallet in shielded storage, not to exceed a maximum volume of 52.6 m³.

Minimum spacing of 44 inches (1.1 m) must be maintained between loaded facility pallets.

- 2.5.35 **IF** moving a facility pallet containing a direct-loaded TDOP to the northeast CH container storage area, or a direct-loaded TDOP is currently located at the northeast CH container storage area, **THEN**, perform Section 2 of Attachment 5 before moving the facility pallet to the northeast CH container storage area.
- 2.5.36 Transport loaded facility pallet to northeast CH container storage area, or conveyance loading room for download.
- 2.5.37 WHE, forward completed original of WP 08-NT3020, Attachment 3 or DOE/WIPP 02-3220, Attachment 10, to the TE (if applicable).

3.0 WASTE DOWNLOADING

- 3.1 Verify U/G waste-handling equipment (i.e., forklifts 52-H-033 and 52-H-126; and U/G transporters 52-H-008A and 52-H-008B) pre-ops have been completed in accordance with WP 05-WH1412 and WP 05-WH1603.
- 3.2 Verify WHB and U/G are configured for waste handling mode by contacting CMRO, if not previously contacted.

SIGN-OFF

- 3.3 If waste has been stored longer than one shift, inspect payload assemblies visually to verify that they are in good condition, and that there are no signs that a release has occurred.

SIGN-OFF or N/A

- 3.4 Contact waste station and verify U/G RCT is present.
- 3.5 Load facility pallet on conveyance loading car.
- 3.6 Load facility pallet on waste hoist conveyance.
- 3.7 Transfer waste to U/G.
- 3.8 U/G RCT, verify transport notification system is energized.

4.0 WASTE EMPLACEMENT

CAUTION

The following Technical Safety Requirements (TSRs) are related to frequency and severity of fires. Failure to comply with any of the following TSRs must be **IMMEDIATELY** reported to the CMRO.

- Two transporters loaded with waste shall maintain greater than 100 feet of separation between them. (This does not apply if a loaded transporter has become disabled and another transporter must either pass or approach to transfer the waste from the disabled transporter.)
- The lube truck is not allowed in the disposal path while waste is in transit from the waste shaft station to the active disposal room.
- No combustible or flammable compressed gas cylinders shall be stored in the disposal path. (A disabled vehicle is not considered to be in storage.)

CAUTION

- No flammable gas or flammable gas cylinders shall be stored between the AIS and South 1000 in West 30 or in the North ventilation circuit within 100 feet of airlock 303/310.
- No construction work involving flammable gas is allowed between the disposal panel supply overcast and the construction bulkhead to the south in East 300 or at bulk head 309 during waste handling operations.
- There shall be a spotter and operator when diesel-powered vehicles are operated within 100 feet of the stored/emplaced waste.
- If automatic fire suppression system becomes inoperable with waste on the equipment, the waste shall be placed in a safe condition, the WHE shall be contacted, and a fire watch shall be posted.
- No non-waste handling vehicles are allowed in the active disposal room during waste handling.
- No non-waste handling equipment is allowed within 100 feet of the waste face without a fire watch.
- No hot work shall be performed within 100 feet of waste without a fire watch being posted.
- No flammable gas cylinders shall be used in the active disposal room without a fire watch being posted.
- No flammable gas cylinders shall be used in the disposal path or active disposal room during waste handling operations.
- Flammable gas and flammable gas cylinders shall not be stored in the active disposal room. The lube truck shall not be allowed in the active disposal room.

NOTE

Unless otherwise directed by WHM, waste will be emplaced in disposal panel in a sequential room-to-room manner, beginning with furthest accessible room. Waste emplacement will begin at ventilation bulkhead in exhaust drift, and emplaced to beginning of disposal room. Waste will then be emplaced in disposal room to beginning of access drift. Waste will then be emplaced in access drift to a point approximately parallel with ventilation bulkhead in exhaust drift.

- 4.1 Remove facility pallet from waste hoist.
- 4.2 Remove folder with paperwork from tie-down strap.
- 4.3 Transport waste to waste emplacement area.
- 4.4 U/G RCT, contact waste station to de-energize waste transport notification system.

CAUTION

All pulling movements performed by the LORON attachment should be conducted at a slow rate of speed without full acceleration until payload is adequately on the LORON attachment. This will minimize the likelihood of tearing a slip sheet.

- 4.5 WHT, ensure the LORON attachment has been positioned level with the facility pallet.
- 4.6 **IF** the U/G surface prevents the attachment from being positioned level with the facility pallet
THEN perform the following:
 - 4.6.1 Using the LORON, grip the slip sheet and move payload back (by backing forklift) until the LORON attachment has evened out or is flush with the edge of the facility pallet.
 - 4.6.2 Pull the payload onto the LORON ensuring that an appropriate angle and height is maintained.
- 4.7 **IF** the slip sheet tears during unloading and all means of removing the payload off the transporter have been exhausted including removal of the upper SWB as applicable,
THEN perform the following:
 - 4.7.1 Place the edge of the LORON approximately 6-8 inches from payload.

NOTE

Tape or string may be used to keep the rigging in place above the lower guide ring.

- 4.7.2 Install appropriate rigging (rated capacity \geq 19,000 lb direct lift) above lower guide ring and around TDOP or lower SWB.
- 4.7.3 Loop sling under the gripper on the LORON attachment.

NOTE

Emplacement data, and/or bar code scans, may be performed at any time during remainder of this procedure.

4.8 WHT, perform the following:

- Unload payload assembly from facility pallet.
 - Remove payload net from payload assembly (if applicable).
-

NOTE

Payload assembly may be emplaced into waste stack while contamination surveys are being performed.

4.9 RCT, perform the following:

- **IF** payload pallet has been in contact with drum assembly, **THEN** perform contamination smears on payload pallet.
- **IF** required to split drum assemblies, **THEN** perform contamination smears on newly exposed areas.

4.10 RCT, monitor smears for gross levels of activity.

NOTE

Attachment 2, Payload Assembly Positioning, shows positioning of payloads.

NOTE

TDOPs will be placed on the bottom row. Four packs of 85-gallon drums and three packs of 100-gallon drums may be placed on top of assemblies of the same type or will be placed on the top row only.

NOTE

Criticality Safety Administrative Control: Waste shall be stacked no greater than three drums or boxes high in the disposal area.

4.11 Position payload assemblies into waste stack.

4.12 If starting a new row, mark row number on first payload assembly emplaced.

4.13 Record required information on Attachment 4, and initial Attachment 1.

SIGN-OFF

4.14 Update Underground Emplacement Map.

- 4.15 If waste that is already emplaced needs to be removed, perform the following:
- 4.15.1 Notify WHE or WHM to obtain concurrence for waste movement.
 - 4.15.2 Relocate containers that need to be moved.
 - 4.15.3 Fill out new Attachment 4, recording in Remarks section the reason for the movement of the container.
 - 4.15.4 Update U/G emplacement map.
 - 4.15.5 Update WWIS emplacement location.
 - 4.15.6 Update original Attachment 4 Remarks section with the reason for the movement of the container.
- 4.16 RCT, verify activity on smears of the payload pallet and newly exposed area is below acceptable limits.

SIGN-OFF or N/A

5.0 BACKFILL

NOTE

Supersacks may be placed on completed columns at any time during the process.

NOTE

WHE will perform safety factor calculations at the end of shift when last container is emplaced. WHM must be contacted if the safety factor is less than 1.67.

- 5.1 **IF** column is complete,
THEN place supersack on top of the column.
- 5.2 **IF** additional MgO (magnesium oxide) is determined to be required by the WHM,
THEN emplace additional supersacks into the waste stack.
- 5.3 Record required information on Attachment 6 and initial Attachment 1.

SIGN-OFF

- 5.4 Performer of procedure, enter printed name, signature, date, and initials on Attachment 1.
- 5.5 Update Underground Emplacement Map.

6.0 UPLOAD WWIS

6.1 WHE, **GO TO** WWIS Emplace Containers Underground Form to upload payload and MgO data into the WWIS, evaluate safety factor, and **RETURN TO** Step 6.2.

6.2 Prior to room closure, WHE, verify safety factor is greater or equal to 1.67.

7.0 WHE REVIEW

NOTE

Prior to initiating waste disposal in the air intake drift for each room, the safety factor must be evaluated to determine if additional MgO is required to be emplaced.

7.1 WHE, verify the following:

- Attachment 1 is completed properly.
- Attachment 3 is completed properly (if applicable).
- Attachment 4 is completed properly.
- Attachment 5 is completed properly (if applicable).
- Attachment 6 is completed properly.
- Waste location from Attachment 4 is updated in WWIS database.
- MgO data from Attachment 6 is updated in WWIS database (if applicable).
- DOE/WIPP 02-3220, Attachment 10, is complete (if applicable).
- WP 08-NT3020, Attachment 3, is complete (if applicable).

7.2 Attach a copy of DOE/WIPP 02-3220, Attachment 10, to the appropriate WP 05-WH1011 attachment and forward the original to the TE, if applicable.

7.3 For Controlled Waste shipments, verify a copy of WP 02-NT3020, Attachment 3, is attached to the appropriate WP 05-WH1011 attachment(s).

7.4 Forward Attachments 1, 4, and 6, and, if applicable, 3 and 5 to Records Coordinator.

Attachment 1 - CH Waste Processing Data Sheet

Step No.	DESCRIPTION	INITIAL
PREREQUISITE ACTIONS		
1.0	Shipment No.: _____ OCA Body Serial No.: _____	WHE
2.0	Shipping documents validated, CH packages inspected and released for unloading.	WHE
3.0	Shipment arrival date entered into WWIS.	WHE
9.0 [A]	Oxygen monitor serial number and due date verified.	WHE or N/A
9.0 [B]	Oxygen monitor daily calibration and sample pump operational check is complete.	WHE or N/A
PERFORMANCE		
2.1	Adequate WHO staff available.	WH
2.2	WHB is configured for waste handling mode.	WH
2.4.24	Activity on smears of OCA lid interior, ICV lid exterior, RAF assembly quick connect, and RAF is below acceptable limits.	RCT
2.4.33	Activity on smears of ICV lid interior and top of payload is below acceptable limits.	RCT
2.4.34	Oxygen concentration is >20 percent in the worker breathing zone.	WHE or N/A
2.5.5	Activity on smears of guide tubes, SWB or TDOP connection devices, and SWB ratchet straps is below acceptable limits.	RCT
2.5.8	Payload inspected for damage.	WH
2.5.13	Payload container numbers concur/do not concur with WWIS	WH
2.5.22	Verified waste shipment container <u>does</u> contain PCBs (warning label applied), or container <u>does not</u> contain PCBs (NA).	WH or N/A
2.5.24	Activity on smears of bottom of payload and ICV interior is below acceptable limits.	RCT
2.5.25	Activity on smears of upper and lower areas of payload assembly and newly exposed areas of the SWB (if applicable) is below acceptable limits.	RCT
2.5.27	Activity on smears is below acceptable limits.	RCT or N/A
2.5.28	Completed Attachment 3. Waste stacked no more than two drums or boxes high on facility pallets.	WH or N/A
2.5.29	Activity on smears of newly exposed area of payload pallet/payload is below acceptable limits.	RCT or N/A
3.2	WHB and U/G are configured for waste handling mode.	WH
3.3	Payload assemblies inspected for damage (if stored > 1 shift).	WH or N/A
4.13	Completed Attachment 4. Waste stacked no more than three drums or boxes high in the disposal area.	WH
4.16	Activity on smears is below acceptable limits.	RCT or N/A
5.3	Completed Attachment 6. Completed columns have necessary backfill emplaced.	WH

Performers, enter printed name, signature, date, and initials:

/	/	/
/	/	/
/	/	/

Attachment 1 - CH Waste Processing Data Sheet

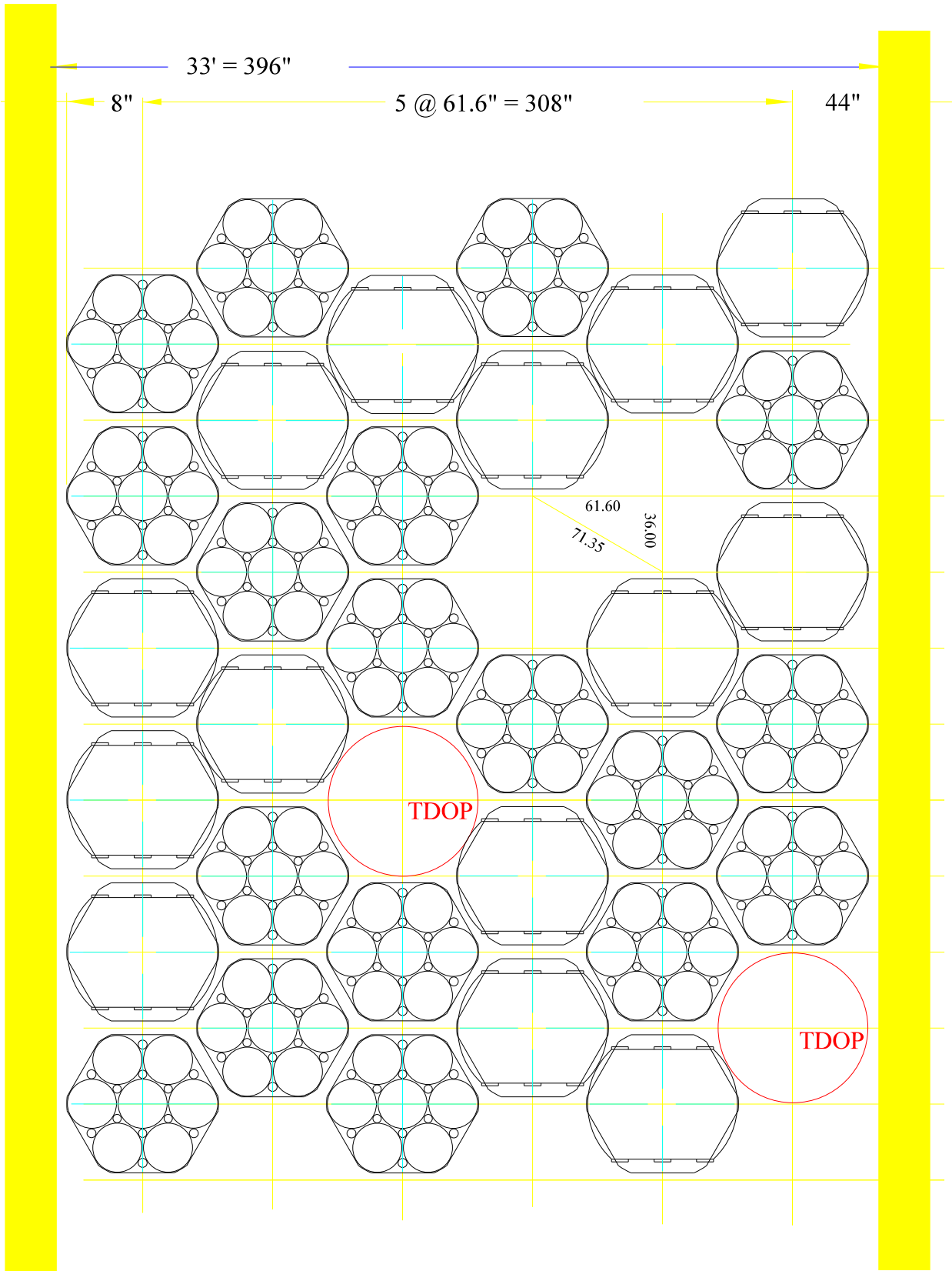
/	/	/	
/	/	/	
/	/	/	
/	/	/	
/	/	/	
Printed Name	Signature	Date	Initials

REMARKS: _____

REVIEW/VALIDATION: _____ / _____ / _____

WHE (Print Name) Signature Date

Attachment 2 - Payload Assembly Positioning



Payload Assembly Positioning

Attachment 3 - Stacking of Multiple Payloads

PALLET #		
FACILITY PALLET POSITION #1		
Weight of	Drum Assembly/SWB: Payload	kg.
Weight of	Drum Assembly/SWB: Payload	kg.
Total weight in facility pallet position #1:		kg.
FACILITY PALLET POSITION #2		
Weight of	Drum Assembly/SWB: Payload	kg.
Weight of	Drum Assembly/SWB: Payload	kg.
Total weight in facility pallet position #2:		kg.

NOTES:

1. Weight of each position must be less than 3,289.47 kg.
2. Criticality Safety Administrative Control: Waste stacks on the facility pallets are not to exceed two layers in height.

Performer: _____ / _____ / _____
Printed Name
Signature
Date

Reviewer: _____ / _____ / _____
Printed Name
Signature
Date

WHE Validation: _____ / _____ / _____
Printed Name
Signature
Date

Attachment 5 - CH Waste Storage Area Capacity

SECTION 1: Projected Volume in TRUDOCK Storage Area:

Number of 55-gallon drum assemblies:	_____ X 1.47m ³ =	_____ m ³
Number of 85-gallon drum assemblies:	_____ X 1.28m ³ =	_____ m ³
Number of 100-gallon drum assemblies:	_____ X 1.14m ³ =	_____ m ³
Number of SWBs:	_____ X 1.88m ³ =	_____ m ³
Number of TDOPs:	_____ X 4.5m ³ =	_____ m ³

Total projected volume in TRUDOCK storage area (not to exceed 15 m³): _____ m³

Performer: _____ / _____ / _____
Printed Name Signature Date

Reviewer: _____ / _____ / _____
Printed Name Signature Date

SECTION 2: Projected Volume in Northeast CH Container Storage Area

Number of 55-gallon drum assemblies:	_____ X 1.47m ³ =	_____ m ³
Number of 85-gallon drum assemblies:	_____ X 1.28m ³ =	_____ m ³
Number of 100-gallon drum assemblies:	_____ X 1.14m ³ =	_____ m ³
Number of SWBs:	_____ X 1.88m ³ =	_____ m ³
Number of TDOPs:	_____ X 4.5m ³ =	_____ m ³

Total projected volume in northeast CH container storage area (not to exceed 52.64m³): _____ m³

Performer: _____ / _____ / _____
Printed Name Signature Date

Reviewer: _____ / _____ / _____
Printed Name Signature Date

SECTION 3: Projected Volume in Shielded Storage Area

Number of 55-gallon drum assemblies:	_____ X 1.47m ³ =	_____ m ³
Number of 85-gallon drum assemblies:	_____ X 1.28m ³ =	_____ m ³
Number of 100-gallon drum assemblies:	_____ X 1.14m ³ =	_____ m ³
Number of SWBs:	_____ X 1.88m ³ =	_____ m ³
Number of TDOPs:	_____ X 4.5m ³ =	_____ m ³

Total projected volume in shielded storage area (not to exceed 7.5m³): _____ m³

Performer: _____ / _____ / _____
Printed Name Signature Date

Reviewer: _____ / _____ / _____
Printed Name Signature Date

WHE Validation: _____ / _____ / _____
Printed Name Signature Date

