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TRUPACT-II 157 Examination Report

Barry H. O'Brien
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Idaho National Engineering and Environmental Laboratory
Bechtel BWXT Idaho, LLC

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Idaho National Engineering and Environmental Laboratory
Clean/Close RWMC Project
Idaho Falls, Idaho 83415

Prepared for the
U.S. Department of Energy
Assistant Secretary for Environmental Management
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ABSTRACT

This report presents the results of examination and recovery activities performed on the TRUPACT-II 157 shipping container. The container was part of a contact-handled transuranic waste shipment being transported on a truck to the Waste Isolation Pilot Plant in New Mexico when an accident occurred. Although the transport vehicle sustained only minor damage, airborne transuranic contamination was detected in air samples extracted from inside TRUPACT-II 157 at the Waste Isolation Pilot Plant. Consequently, the shipping container was rejected, resealed, and returned to the Idaho National Engineering and Environmental Laboratory where the payload was disassembled, examined, and recovered for subsequent reshipment to the Waste Isolation Pilot Plant. This report documents the results of those activities.

SUMMARY

On August 23, 2002, a shipment of contact-handled transuranic waste consisting of two TRUPACT-II (transuranic package for transportation, Type II) containers, each containing 14 waste drums, was assembled at the Radioactive Waste Management Complex (RWMC) on the Idaho National Engineering Laboratory (INEEL), and transported to the Waste Isolation Pilot Plant (WIPP) in New Mexico for long-term storage. On August 25, 2002, just prior to arriving at WIPP, the shipment was involved in a vehicle accident. During the shipment receipt process at WIPP, sampling of the radiological assessment filter (RAF) on shipping container TRUPACT-II 157 indicated airborne alpha-contamination of the inner containment vessel (ICV). Consequently, on August 29, 2002, TRUPACT-II 157 was returned to the INEEL to perform recovery and examination of the payload.

TRUPACT-II 157 was disassembled and examined inside the INEEL Test Area North (TAN) Hot Shop in accordance with procedures approved by the Department of Energy Idaho Operations Office (DOE-ID) and Carlsbad Field Office of DOE. Recovery, examination and repackaging of the payload drums was performed from January 27 to February 3, 2003. On February 3 and 4, 2003, the outer containment vessel (OCV), ICV, and 14 waste drums were transported back to the RWMC . On February 5, 2003, the standard waste boxes containing the TRUPACT-II 157 payload drums (excluding one drum found with surface contamination) were placed into three TRUPACT-IIs for return to WIPP. The shipment left the INEEL on February 12, 2003, arriving at WIPP February 13, 2003, where the payloads were placed underground on February 19, 2003.

During the recovery process, videos, still-shot photos, air samples, and smears were taken of the OCV, ICV, various packaging components, and the 55-gal drums that made up the payload. Disassembly and recovery of the TRUPACT-II 157 payload was conducted smoothly and successfully, without complication.

This report addresses only observations made during the recovery and examination of TRUPACT-II 157 per approved examination plan PLN-1169. The examination was not a root cause investigation. The examination of the TRUPACT-II 157 provided the following results:

- The vehicle accident did not compromise the integrity of the TRUPACT-II 157 shipping container as evidenced by the following:
  - No physical damage was observed on either the OCV or the ICV
  - No contamination was found on the exterior or interior of the OCV
  - No contamination was found external to the ICV.
- The vehicle accident did not cause the contamination found in TRUPACT-II 157 as evidenced by the following:

  - No damage was found on the ICV lid or the honeycomb spacers, slip sheets, or guide tubes inside the ICV

  - No physical damage was evident on the drums inside the ICV

  - No shifting of the payload was apparent.

- The contamination found on Drum IDRF741202484 was contained within the ICV.

- The ICV was found to be under vacuum after over 4 months storage prior to initiating the recovery operation. This attests to the high integrity and sealing capability of the TRUPACT-II shipping container.

- Drum IDRF741202484 was found to have localized contamination on top of the drum lid. The contamination found was up to 110 dpm/100 cm^2 alpha, which exceeds the limit of 20 dpm/100 cm^2 alpha.

  - Radiological analysis of the contamination showed it to be consistent with the drum's radiological contents.

- Drum IDRF741202484 was also found to have a loose lock-ring bolt, such that the lock ring could be rotated by hand.

- Contamination smears of drum surfaces adjacent to and below the lock ring of Drum IDRF741202484 were within limits. The first smear on and around the filter was also within limits. The follow-up smear on and around the filter was above the alpha limit but the smear extended farther onto the drum lid surface.

- The results of the examination did not conclusively identify the exact leakage point from drum IDRF741202484. However, it was confirmed that this drum was the source of the contamination.

- A loose lock-ring bolt jam nut was also discovered on Drum IDRF74700411, although the lock-ring bolt was secure.

  - This drum did not have contamination above limits.

ACKNOWLEDGMENTS

A special thanks to the following people and organizations for successfully recovering and over-packing the waste drums from TRUPACT-II 157, and for providing information for this report.:

- 3100 m^3 Project personnel from the Radioactive Waste Management Complex
- Operations personnel under supervisor D. A. Wale and foreman K. L. Kynaston from Test Area North
- Radiological control technicians under foreman Gary Lusk from Test Area North
- Carpenters from Test Area North who constructed the work platform, ICV box, payload sleeving, and contamination control tent
- Quality engineering support personnel from the 3100 m^3 Project and TAN Operations organizations.
- DOE-ID and CBFO support for the recovery.
- R. B. King for providing Technical Editing.
- Chris Morgan for video editing.

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ACRONYMS

ANL-W	Argonne National Laboratory-West
CAM	constant air monitor
CBFO	Carlsbad Field Office of DOE
CH-TRU	contact-handled transuranic
cpm	counts per minute of radioactivity
DOE	U.S. Department of Energy
DOE-ID	U.S. Department of Energy Idaho Operations Office
dpm	disintegrations per minute of radioactivity
ICV	inner containment vessel
INEEL	Idaho National Engineering and Environmental Laboratory
in. Hg	inch mercury column—a unit of pressure equal to about ½ psi
OCA	outer containment assembly (consisting of the OCV, ICV, and Payload)
OCV	outer containment vessel (without ICV and Payload)
psig	pounds per square inch pressure, gauge
RAF	radiological assessment filter
RWMC	Radioactive Waste Management Complex
SWB	DOT 7A standard waste box
SWEPP	Stored Waste Examination Pilot Plant
TAN	Test Area North
TRU	transuranic
TRUPACT-II	transuranic package for transportation, Type II
VOC	volatile organic compound
WIPP	Waste Isolation Pilot Plant

TRUPACT-II 157 Payload Examination Report

1. INTRODUCTION

The purpose of this report is to document the results of performing the work described in the TRUPACT 157 Payload Examination Plan.[1] The examination was not a root cause investigation. The scope of the report included documentation of the recovery operations procedures, as-found condition of the payload and shipping containers before and during recovery, results of contamination measurements, examination log, compilation of the information collected during the examination that may be used to support transportation and disposition of the inner containment vessel (ICV), documentation of auxiliary examination activities such as containment tents and over-packing of the payload, and lessons learned from the recovery effort. Video tapes, DVD discs, and still images were to be provided to supplement the written report as directed by the project manager.

1.1 TRUPACT-II 157 Shipment and Accident

On August 23, 2002, a shipment (IN020271) containing two TRUPACT-II (transuranic packages for transportation, Type II) shipping containers (151 and 157) was released for shipment from the Idaho National Engineering and Environmental Laboratory (INEEL) to the Waste Isolation Pilot Plant (WIPP) in New Mexico. Each TRUPACT-II container was loaded with fourteen 55-gal drums of sludge and filter waste. The shipment was in radiological compliance with TRUPACT-II transportation requirements. Those requirements are that a shipment have a radiological dose rate of <200 mrem/hr at the contact, <20 dpm/100 cm^2 alpha (α) emitting radionuclides, and <200 dpm/100 cm^2 beta-gamma ($\beta\gamma$) emitting radionuclides.

On August 25, 2002, the shipment was involved in a vehicle accident about 25 miles before the WIPP truck arrived at WIPP. A pickup truck ran into the rear left of the WIPP truck trailer. Although the WIPP truck received little damage, the pickup truck was heavily damaged. After a full inspection by the New Mexico Department of Transportation, the WIPP truck was allowed to proceed to the site. The New Mexico State Police accident report and a Carlsbad Field Office of DOE (CBFO) analysis of the accident with photographs are provided in Appendix A.

1.2 Radiological Data on TRUPACT-II 157 Taken at WIPP

After receipt and processing into WIPP, the TRUPACT-II 151 and 157 shipping containers were removed from the trailer and staged in the Waste Handling Building for unloading.

During the morning of August 25, 2002, the shipping documentation was reviewed and initial surface radiological smears of the shipping containers were completed. No surface contamination was found on either TRUPACT-II. Unloading operations continued until an analysis of the filter, downstream of the vacuum tool used to evacuate the ICV before lid removal, indicated elevated alpha activity in TRUPACT-II 157. The air sample was conducted by drawing a vacuum of approximately 4 in. Hg on the ICV through the vent port. The air sample passed through a radiological assessment filter (RAF). Although not calibrated to quantify airborne contamination, the RAF samples are used by WIPP to assess gross contamination inside the ICV prior to opening. The RAF was subsequently counted on an Eberline Alpha-6 continuous air monitor (CAM). Two measurements were taken 6 minutes apart, yielding indications of 27–30 dpm alpha activity on the filter. The peak channel on the counter was indicative of plutonium contamination. The RAF filter was then transferred to the WIPP radiochemistry lab and subjected to a 10-minute gross alpha-beta count using a gas proportional counter. This indicated alpha and beta activity of approximately 30 dpm and 3.4 dpm, respectively.

The following day (Monday, August 26, 2002), WIPP personnel developed and implemented a procedure to further assess TRUPACT-II 157. Using the procedure, three additional air samples were drawn through the ICV vent port, each time allowing air to refill the ICV after the sampling. Following each sample, ambient air was reintroduced to the ICV over a period >1/2 minute, bringing it back to atmospheric pressure. The resultant RAF filters were evaluated in a manner similar to that reported above. The results of all four samples are summarized in Table 1 (see Appendix A for a complete summary of the operations and data collected at WIPP). WIPP personnel estimated the first sample to consist of 0.2 m^3 of air, and the remaining samples to consist of 0.7 m^3 of air from the ICV. The difference in volumes was due to the first sample being taken using 4 in. Hg vacuum while the additional samples were taken using 12 in. Hg vacuum.

Due to regulatory considerations, the ICV could not be opened at WIPP. The potential existed for contaminating the inside of the Waste Handling Building. The most prudent course of action was determined to be to replace the outer containment vessel (OCV) lid, reseal the TRUPACT-II outer containment assembly (OCA), and ship TRUPACT-II 157 back to INEEL, which has facilities and personnel trained to handle contaminated waste containers, and where the payload could be evaluated.

Table 1. Summary of WIPP RAF samples from TRUPACT-II 157.

Sample Designation	Sampling Date and Time	Alpha-6 CAM[a] (cpm)	Gross Alpha[b] (dpm)	Gross Beta[b] (dpm)	Am-241 γ-spec.[c]	Pu-238[d]	Pu-239-240[d]
TP157RAF	8/25/02 13:34, 13:40	5.7 and 5.3	29.7	3.4	2.6	0.7	19.9
157RAF-2	8/26/02 14:40	240	2530 (~1900)[e]	1090	176	Not Available	Not Available
2nd Pull	8/26/02 16:10	465	4380 (~3300)[e]	1450	309	Not Available	Not Available
3rd RAF	8/26/02 18:02	890	6030 (5500)[e]	794	464	132	1640

a. Gross count rate (cpm) in the Pu region of Alpha-6 CAM (efficiency ~20%).

b. Initial counting from the gas proportional counter in dpm.

c. Counted using a geometry-calibrated gamma spectrometer, dpm.

d. Results from radiochemistry extraction and alpha spectrometry, dpm.

e. Gross alpha dpm several hours after sample collection (without Rn decay progenies).

1.3 Return Shipment and Storage at the INEEL

On August 28, 2002, TRUPACT-II 157 was resealed and shipped back to the INEEL. When the shipment arrived at the INEEL on August 29, 2002, TRUPACT-II 157 was off-loaded and placed into Resource Conservation and Recovery Act-compliant storage in building WMF-628 at the Radioactive Waste Management Complex (RWMC) (see Figure 1), where it remained in monitored storage until an approved location and method of handling this Resource Conservation and Recovery Act waste was obtained.

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Figure 1. TRUPACT-II 157 in the WMF-628 storage module at the RWMC.

1.4 TRUPACT-II Assembly

The TRUPACT II container has a USNRC Certificate of Compliance as a Type B with designation B(U)F under 10 CFR 71.12. The TRUPACT-II 157 assembly consisted of a standard TRUPACT-II shipping package and a payload of fourteen 55-gallon drums containing contact-handled transuranic (CH-TRU) waste consisting of filter media and sludges (Appendix B). The TRUPACT-II containers are designed to transport transuranic waste to WIPP and provide contamination containment in the event of a payload leak.

A TRUPACT-II shipping package is composed of an OCA which includes an OCV, ICV, two aluminum honeycomb spacer assemblies, and the payload. The OCV provides a primary containment boundary and acts as an environ-mental barrier, the ICV provides a secondary containment boundary, the two aluminum honeycomb spacer assemblies fit within the dished head at each end of the of the ICV, and the payload goes inside the ICV between the spacer assemblies. Figure 2 illustrates an exploded view of the TRUPACT-II packaging components.[2] Figure 3 presents a detailed view of the closure/seal areas.[3]

The ICV and the OCA each have a seal test port and vent port. The seal test port in each vessel provides access to the volume between the two o-ring seals that exist between the lid and body (upper and lower, respectively) seal flanges. The seal test ports are used to demonstrate the leak tightness of the seals and to verify proper assembly of the packaging prior to shipment. The vent port is used during loading and unloading to facilitate lid installation and removal. A negative pressure of 2 to 4 in. Hg (1 to 2 psig) on the vent port is necessary to allow the locking ring to be freely rotated. At the receiving end of shipment, this same vent port is used to relieve any vacuum or pressure resulting from different atmospheric pressures at the shipping and receiving locations.

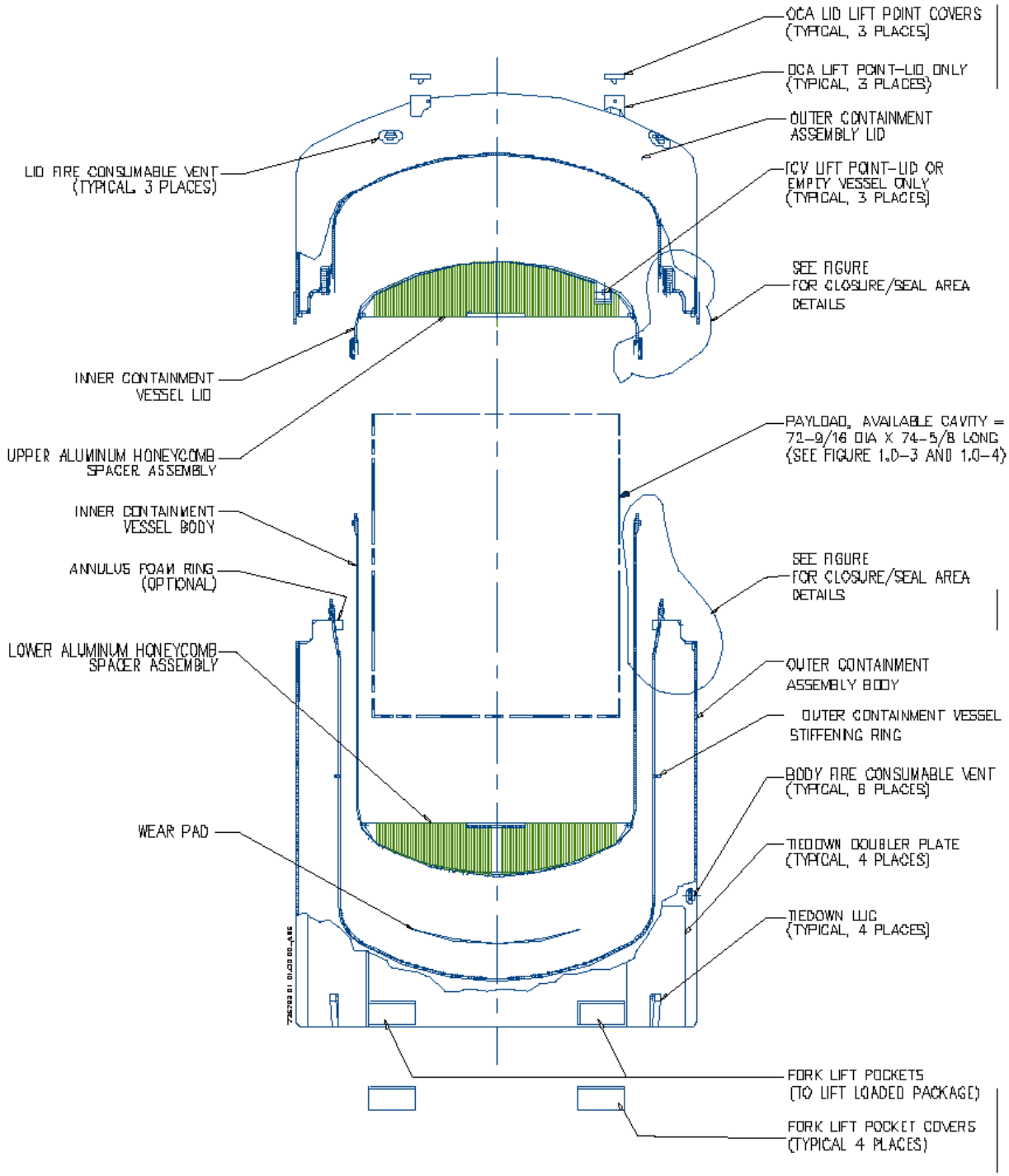

Figure 2. TRUPACT-II outer containment assembly (adapted from Reference 2).

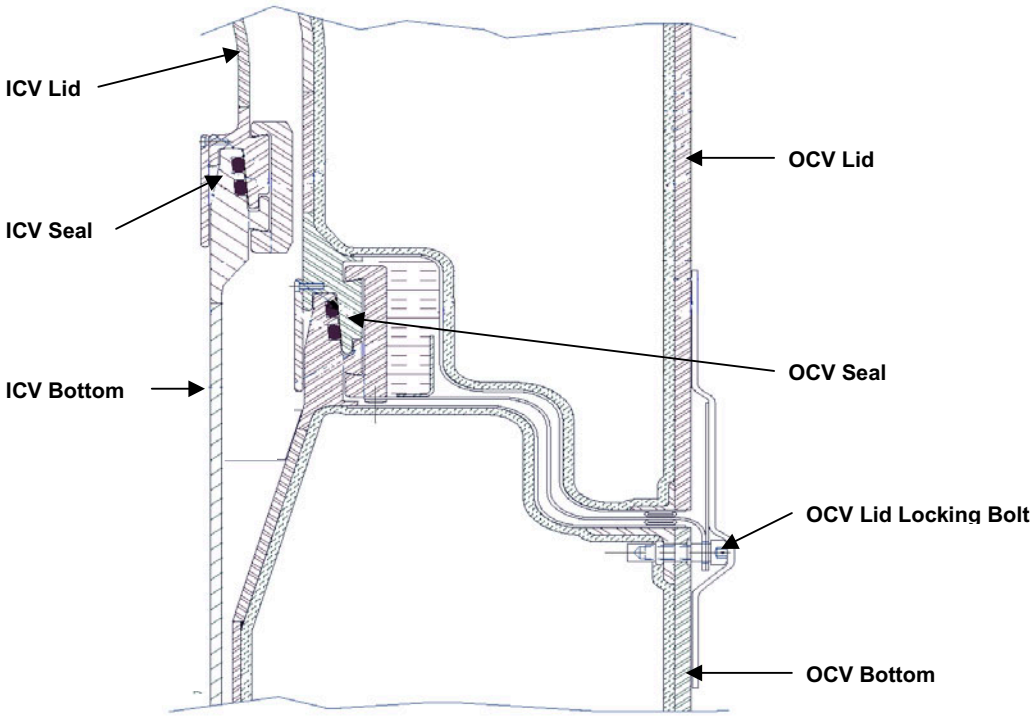

Figure 3. TRUPACT-II closure/seal area (adapted from Reference 3).

1.4.1 14-Drum Payload Configuration in TRUPACT-II 157

The payload for TRUPACT-II 157 was the standard 14-drums containing CH-TRU waste. The TRUPACT-II has a U.S. Nuclear Regulatory Commission Certificate of Compliance as a Type B with designation B(U)F) under 10 CFR 71.12. The payload was examined at the Stored Waste Examination Pilot Plant (SWEPP) and certified for shipment according to the WIPP Contact Handled Waste Acceptance Criteria. Prior to shipment, the drums were assembled into a payload in WMF-635. An example of a 14-drum payload and automatic center of gravity lifting fixture is shown in Figure 4. Each drum is a UN 1A2 55-gallon open-top, carbon-steel waste drum with a plastic liner and a vent filter installed in the lid to prevent gas buildup in the drum. The eight older drums had Nucfil 020 self-tapping filters added at the RWMC Drum Venting Facility. The Drum Venting Facility functions to remotely vent the TRU waste drums and insert a filter assembly into the vent hole. The filter assembly allows continuous aspiration of internally-generated gases while containing radioactive particulates inside the drum. The assembly consists of a gasket-sealed, self-tapping, hollow, round-headed screw with an internal filter element. The filters provide a removal efficiency of greater than 99.9% for 0.3 to 0.45 μ particulates. The filters are either inserted in a hole punched about 5 inches from the top rim, or in a bung hole in the center of the drum lid. The remaining six drums were new, having been recently repacked at Argonne National Laboratory-West (ANL-W) in support of the 3100 m^3 Project. These drums employed Nucfil 013 bung filters in the center of the lid. Appendix B provides additional assembly information for the payload.

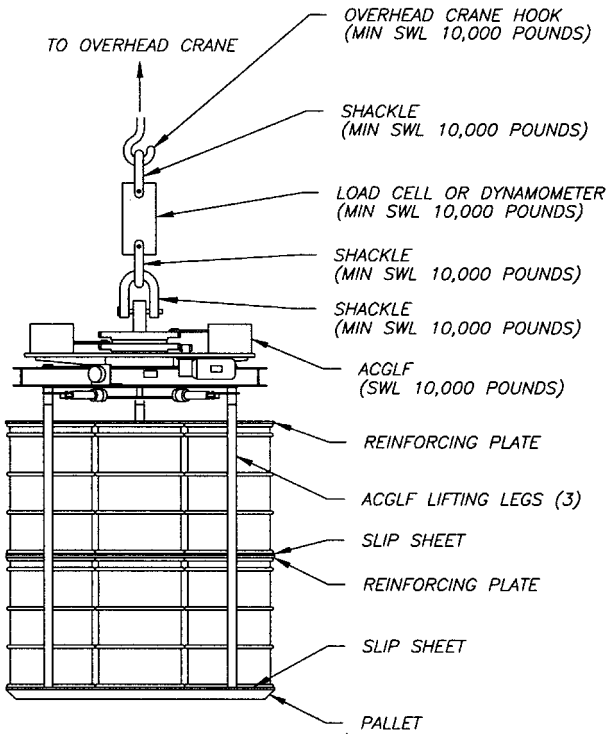

Figure 4. Example of TRUPACT-II 14-drum payload configuration (adapted from Reference 2).

TRUPACT-II 157 contained payload assembly No. 6469. Copies of the shipping documents with information on the contents and weights are provided in Appendix B. Five of the drums, in payload positions 1–5 contain filter media, the other nine drums contain sludge. The filter drums are placed on the second tier of the payload because they are lighter than the sludge drums. Seven of the drums had been opened and liquid absorbent added prior to shipment to meet WIPP free liquid acceptance criteria. Figure 5 illustrates the drum positions, slip sheet orientations, guide tube locations, filter locations, and lock ring chine locations of the payload as they were found during the recovery.

1.5 Recovery Plan

1.5.1 TRUPACT-II 157 Recovery Plan

Efforts to evaluate options for dealing with TRUPACT-II 157 were initiated in September 2002 at both the INEEL and WIPP. That same month, the Department of Energy Idaho Operations Office (DOE-ID) and CBFO also decided to recover the payload from TRUPACT-II 157 to determine the source of contamination.

A draft recovery plan was developed and submitted to DOE-ID on October 10, 2002. The recovery plan proposed using the Test Area North (TAN) Hot Shop building (TAN-607) to perform the recovery work. TAN-607 was selected because of its capacity to accomplish the TRUPACT-II 157 recovery operation while protecting workers and the environment. On October 11, 2002, a letter was received from the DOE-ID Contracting Officer with direction to proceed and complete the recovery operation no later than December 31, 2002.[4] The final Recovery Plan[5] presented the INEEL approach for achieving the following objectives:

- Return of the OCA to WIPP as soon as possible

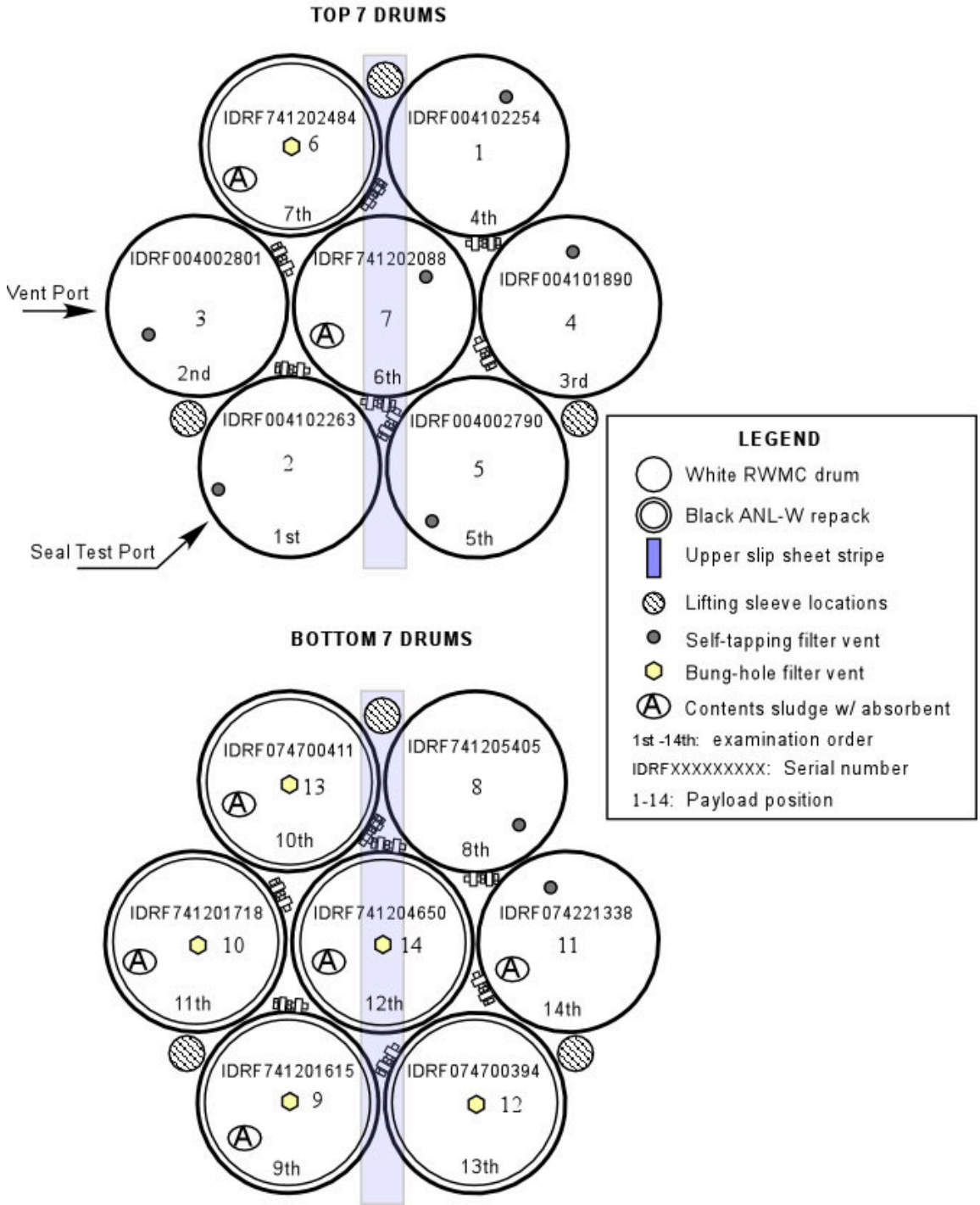

Figure 5. Configuration of payload.

- Remove the contaminated payload from TRUPACT-II 157
- Inspect and collect data (photographs, radiological smears) of individual payload containers to identify the potential source of contamination
- Over-pack the contaminated payload drums into Department of Transportation 7A standard waste boxes (SWBs) in a configuration meeting TRUPACT-II payload compliance requirements
- Receive the over-packed TRUPACT-II 157 at the RWMC for assembly, certification, and loading into TRPPACT-II shipping containers by the Carlsbad Field Office Mobile TRPACT-II Loading Team
- Complete shipment of the over-packed TRUPACT-II 157 payload to WIPP
- Complete disposition of the ICV
- Document results of payload inspection and lessons-learned.

Operational readiness and approval to start operations at TAN were completed on schedule, December 2, 2002. However, issues with obtaining regulatory approval to perform the work in the TAN Hot Shop developed in early December 2002. Alternative approaches to performing the required recovery work that addressed the regulatory issues were evaluated during December 2002. A revised regulatory approach that used a dual transfer facility concept was finally selected as the best option with which to proceed. This option capitalized on the successful mockup recovery operation previously performed at TAN.

The revised TRUPACT-II 157 Recovery Plan was approved in February 2003.[5] This plan required shipping the repackaged TRUPACT-II 157 payload to WIPP using the WIPP Mobile TRUPACT-II Loading Team to perform the loading operation at the Advanced Mixed Waste Treatment Plant. TAN and RWMC procedures had to be modified to implement the building of certifiable SWBs, and the completion of certification activities associated with making another shipment to WIPP.

The recovery work, which was completed as planned, included:

- Revising the TAN Safety Analysis Report.
- Submitting regulatory documents to the Idaho Department of Environmental Quality.
- Developing a TRUPACT-II 157 Examination Plan (PLN-1169; Reference 1).
- Preparing an onsite transportation plan.
- Developing operating procedures (TPR-6230 and TPR-6233)[6,7] and associated work implementing documents such as inspection plans, lift plans, and job safety analyses to direct recovery work. These closely mirrored the original implementing documents for the 3100 m^3 Project.
- Training and qualifying operational crews.
- Constructing the work platform for access to the OCV and ICV lids, sleeving to contain contamination during lifting of the ICV lid and payload, and a radiological containment tent for payload processing.

- Completing a mockup of the planned operations.
- Completing a contractor management self-assessment to document operational readiness.

1.5.2 Description of the TAN-607 Hot Shop

The TAN-607 Hot Shop (see Figure 6) is a large, existing shielded facility containing a high bay equipped with overhead cranes, a large overhead manipulator, auxiliary wall-mounted manipulators, cameras, video-recording capabilities, and other equipment for remote-handling of radioactive material. Historically, this facility has been used to receive, manipulate, and store spent nuclear fuel and other highly-irradiated materials such as the Three Mile Island core debris. The Hot Shop has remotely operated cranes and video cameras to allow remote operations for high radioactive or contaminated waste.

Figure 6. Aerial view of TAN.

2. THE PAYLOAD EXAMINATION PLAN

A *Payload Examination Plan* (Reference 1) was prepared and used to collect information on the as-found condition of the TRUPACT-II 157 payload and shipping container, and to support disposition of the ICV. The plan also directed documentation of auxiliary examination activities such as containment tents and over-packing of the payload as a reference for future recovery operations. The plan identified additional information to be collected and the items to be included in this examination report. Concurrence with the plan was obtained from CBFO prior to commencement of recovery operations.

3. QUALITY ASSURANCE

The recovery operations were performed using procedures that were reviewed and approved by both the INEEL and CBFO under a qualified DOE Quality Assurance program. Quality inspection plans were prepared for the recovery operations and over-packing of the waste drums.[8,9] Quality Assurance provided oversight and verification of the TAN handling procedures, assembly of SWB payloads, assembly of TRUPACT-II payloads, final review of shipping documents for the shipment of 13 waste drums back to WIPP, and review of the final examination report.

4. RECOVERY, EXAMINATION, AND DISCUSSION

4.1 Recovery Operations

Recovery operations were performed in accordance with existing TAN operating procedures and new recovery procedures TPR-6230 and TPR-6233 (References 6 and 7, see record copy in Appendix C). Concurrence for the new recovery procedures and the *Examination Plan* was obtained from CBFO. The examination, which followed PLN-1169, was performed concurrently with recovery operations. The daily log recorded by the examination engineers is provided in Appendix D.

The increase in alpha-contamination collected on the WIPP RAF filter through the progression of four samples indicated high levels of alpha contamination inside the ICV. During initial work planning at the INEEL, there was concern that taking additional air samples using the same vacuum sampling method that was used for the RAF samples could continue to increase the contamination inside the ICV and complicate recovery efforts. Instead, the recovery team and Radiological Engineering decided to take an airborne radioactive particulate sample from inside the ICV immediately after the lid was lifted. This sample, which would comply with INEEL procedures, would assess the airborne contamination as part of the Radiological Work Package to protect workers during the recovery. This methodology was part of the *Examination Plan* and work procedures (Appendix C) that had CBFO concurrence prior to the start of the recovery operations. During the recovery, a change in emphasis was made to ensure that existing contamination in the Hot Shop did not contaminate the payload after the initial air sample and smears of the ICV were found to be uncontaminated.

The Hot Shop was prepared for recovery operations before TRUPACT-II 157 arrived. Contamination control measures were designed and implemented to control the expected airborne and surface alpha contamination. Zippers and gloves were added to an existing radiological containment tent and it was installed inside the Hot Shop to provide primary contamination containment during payload disassembly (see Figure 7). The design allowed for payload disassembly without personnel entering into the tent. The tent was divided into three vestibules to isolate payload disassembly, individual drum examinations, and when necessary, bagging operations prior to transfer into the SWBs. Reclosable openings were added to accept the payload, and a longitudinal zipper opening on the ceiling allowed the crane cable and drum lifting device to transfer drums through the tent between vestibules. A rolling cart was used to transfer individual drums out of the tent and a second crane was used to lift the drums and place them in SWBs. Windows and port gloves provided work access, while remotely controlled cameras inside the payload vestibule and examination vestibule allowed the examination engineers to view and record the condition of the payload and drums without entering the tent. Six remotely controlled video cameras with pan and zoom, one bore scope camera, two video recorders, and one digital camera were employed to record the operation.

A 40-ft-long primary containment sleeve was constructed to fit around the OCV so that internal components such as the ICV lid and payload could be lifted from the inner vessel and contain any contamination on the payload. The sleeve was fitted with window panels so the payload could be visually examined with the ICV lid lifted approximately 18 in. off the cavity as shown in see Figure 8. The sleeve was constructed such that it could be sealed and separated from the main body, allowing individual components to remain contained after being removed from the OCA. A photo was taken of the payload in the sleeving after removal from the ICV and prior to placement into the tent through a ceiling opening (see Figure 9).

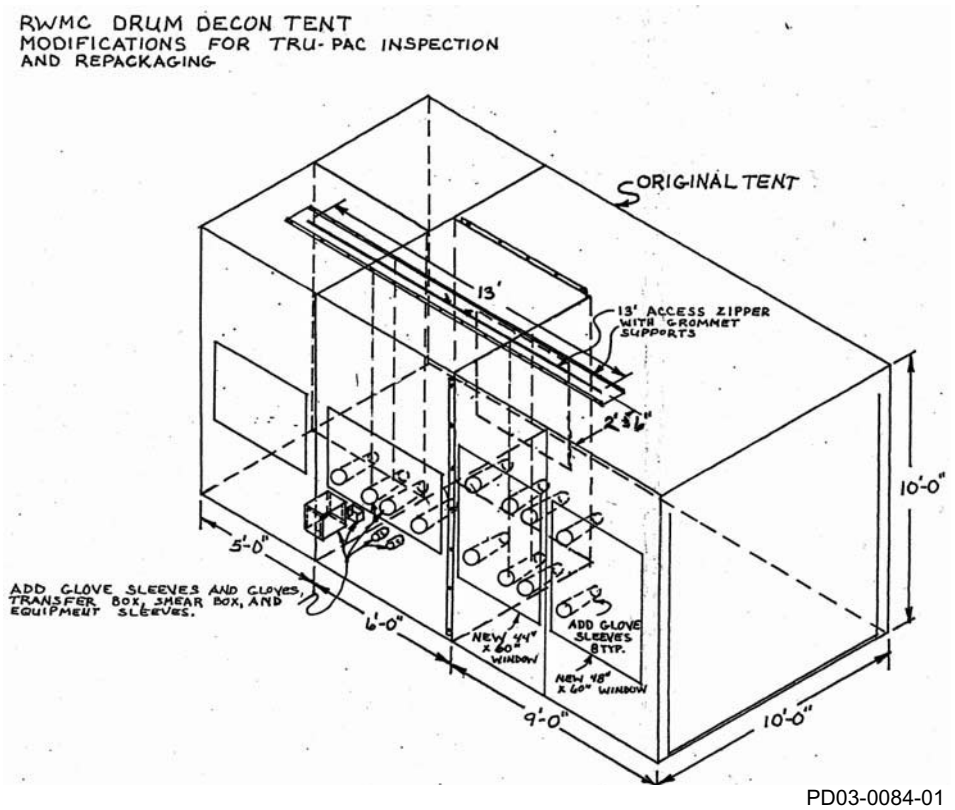

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Figure 7. Payload disassembly and drum examination tent.

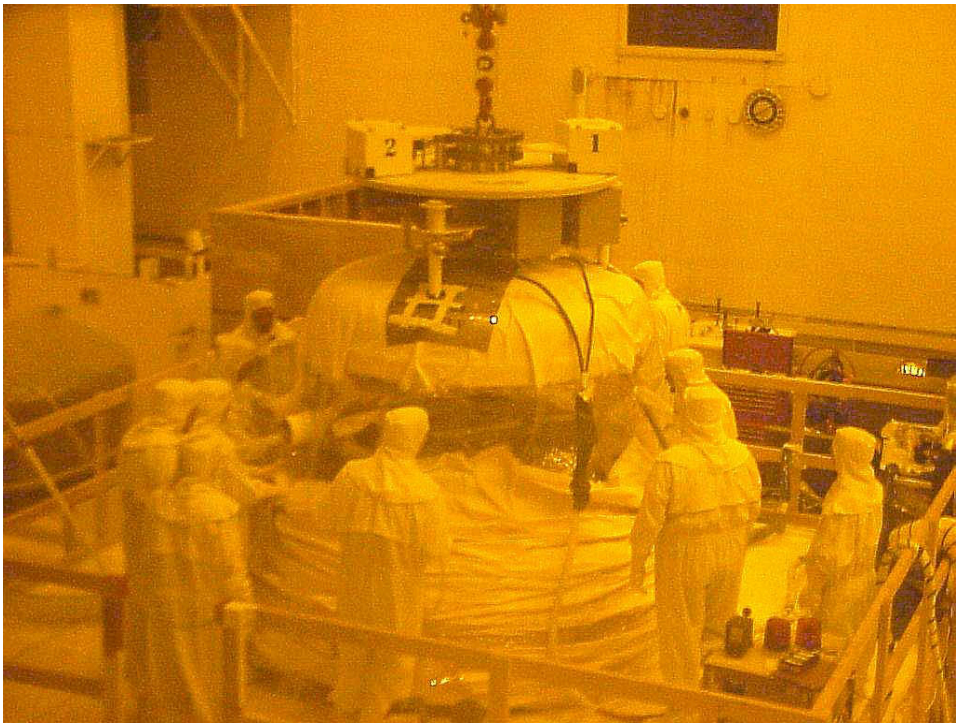

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Figure 8. ICV lid with sleeving and surrounding work platform.

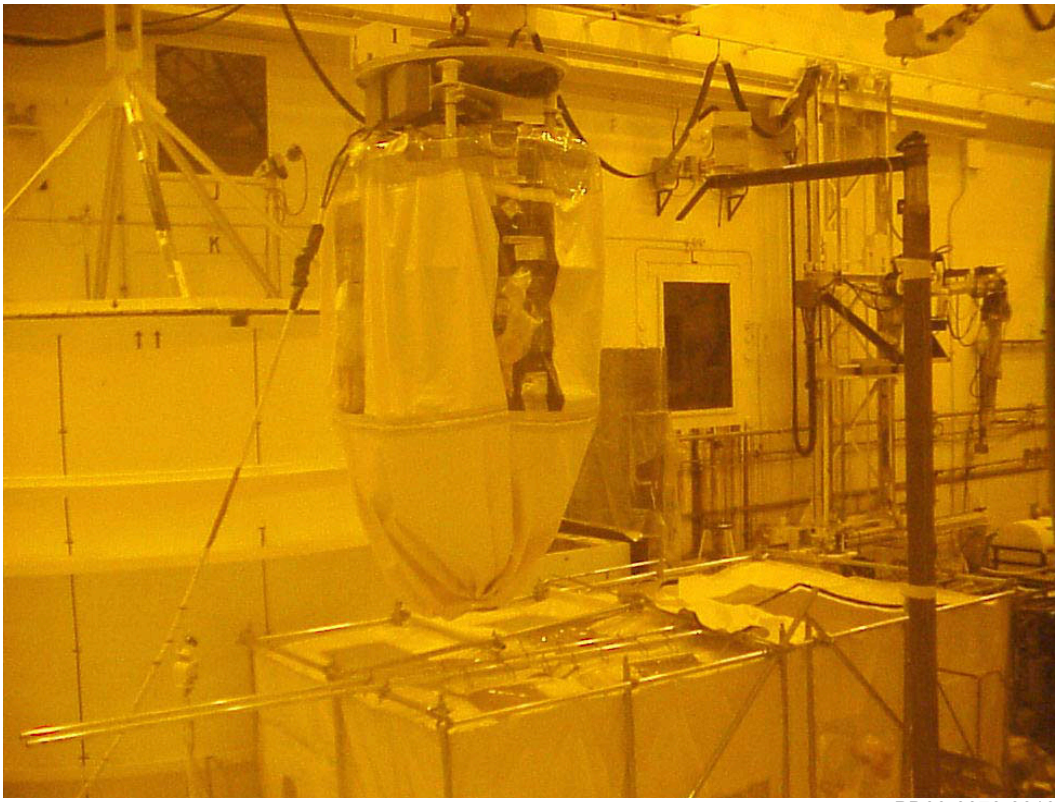

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Figure 9. Processing tent and payload in sleeving prior to lowering into tent.

A “playpen” area was set up outside of the primary containment areas to provide an intermediate buffer area where drums could be smeared before placement into the SWBs (see Figure 10). The playpen area consisted of a covered floor surrounded by a temporary partial wall approximately 30 in. high. During recovery operations, these zones changed designations between radiological buffer area and contamination area, depending on the nature of the current operation and status of zone smears. The work area was periodically surveyed before, during, and after the recovery operation in the Hot Shop to verify (a) that existing contamination in other areas of the Hot Shop had not contaminated the ICV, OCV, and waste boxes, and (b) that the TRUPACT-II 157 payload had not contaminated the work areas. Copies of these surveys are provided chronologically in Appendix A.

A work platform was designed and built to accept the TRUPACT-II 157 assembly and provide appropriate height for operator access to the vent ports, lock rings, and internals (refer to Figure 8). The platform was designed in two halves so that the vessel could be placed in the cut-out in one section, and then the other section placed around the vessel. Figure 8 and the other color photos of the recovery operation were taken through a zinc-bromide shielding window, which provided little color contrast.

In addition to preparing the Hot Shop, the operations team trained on mockup assemblies prior to the arrival of the subject vessel. These mockups identified several minor improvements to the disassembly and examination procedures, resulting in a streamlined, efficient process for the final effort.

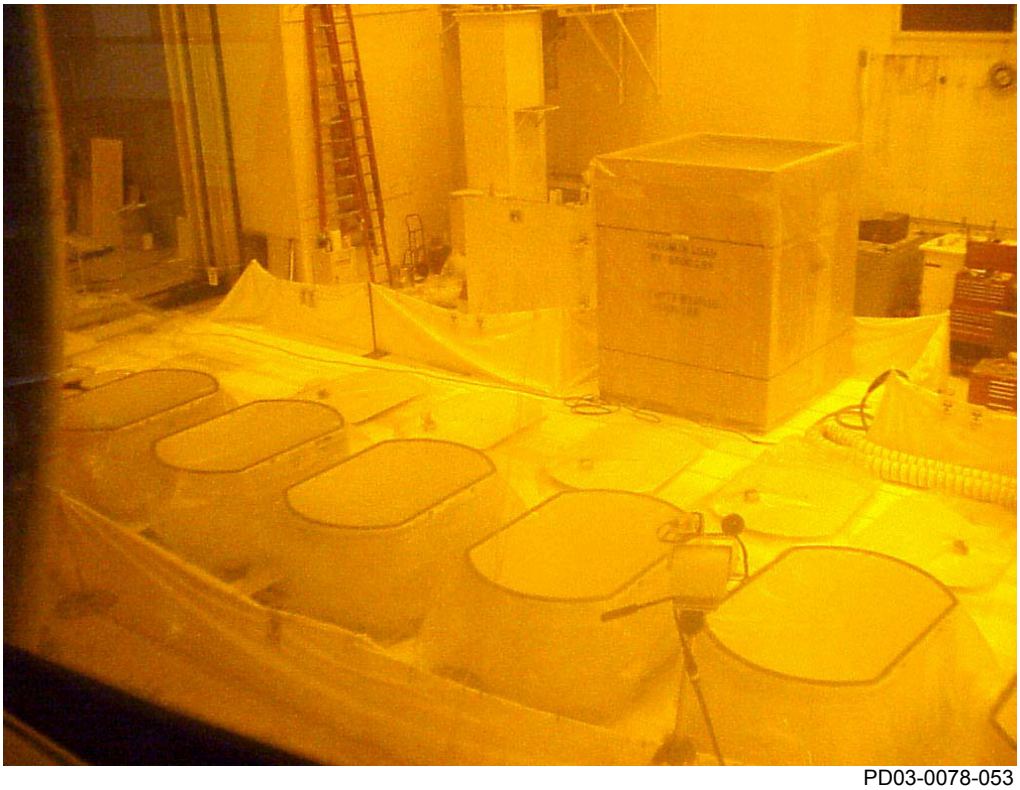

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Figure 10. Outer playpen with staged SWBs and ICV box.

4.2 Sequence of Operations

This section summarizes the sequence of operations for the recovery. More information, such as times of occurrence, is provided in Appendix E. A list of the videotapes recorded during the recovery is provided in Appendix F. Resumes of the principal investigators are provided in Appendix G.

4.2.1 OCA/ICV Handling and Payload Removal

For clarification, this section presents radiological smear results as being "positive" or "negative." A positive result indicates contamination above acceptable limits, a negative result falls within acceptable limits. Alpha and beta-gamma limits for surface contamination are <20 dpm/100 cm^2 alpha and <1,000 dpm/100 cm^2 beta-gamma, respectively per PRD-183, Table 2.[10]

On January 27, 2003, the vessel was lifted off the haul trailer by a forklift and transferred into the Hot Shop extension, where the cavity section of the OCA was wrapped in plastic to prevent possible contamination of the vessel by residual Hot Shop contamination. The vessel was then transferred into the Hot Shop and surrounded by the two-piece engineered work platform designed and constructed to fit around the vessel at an appropriate height for recovery operations.

In examining the outer vessel, the team discovered that the vent port tamper indicating device was damaged; however, the OCV lid lock-ring bolt tamper-indicating device was still intact, indicating that the OCV lid had not been removed during storage. With verbal concurrence from CBFO, the decision was made to proceed with recovery operations. Radiological smears of the vessel's outer surface found no contamination above acceptable limits.

Following TPR-6230 (see Appendix C), the workers lifted the OCV lid off the cavity and smeared the inner surfaces of the OCV lid and the newly exposed outer surfaces of the ICV lid. In addition, they took air samples to detect the presence of airborne radiation and volatile organic compounds (VOC). Once it was determined that all surface and airborne radiation and VOC results were negative (no contamination above acceptable limits), the OCV lid was moved to a lid stand.

The workers proceeded to unlock the ICV lid. This entailed applying a 4 in. Hg vacuum on the ICV cavity via the vent port to allow the lock ring to rotate. During this process, an operator accidentally rotated the lock ring with light hand pressure prior to installation of the vent port tool. After the vent port tool was installed, it was determined that the ICV was already under 4 in. Hg vacuum, which explained why the lock ring had rotated freely, and no further pumping was required. The onsite CBFO and DOE-ID representatives were notified.

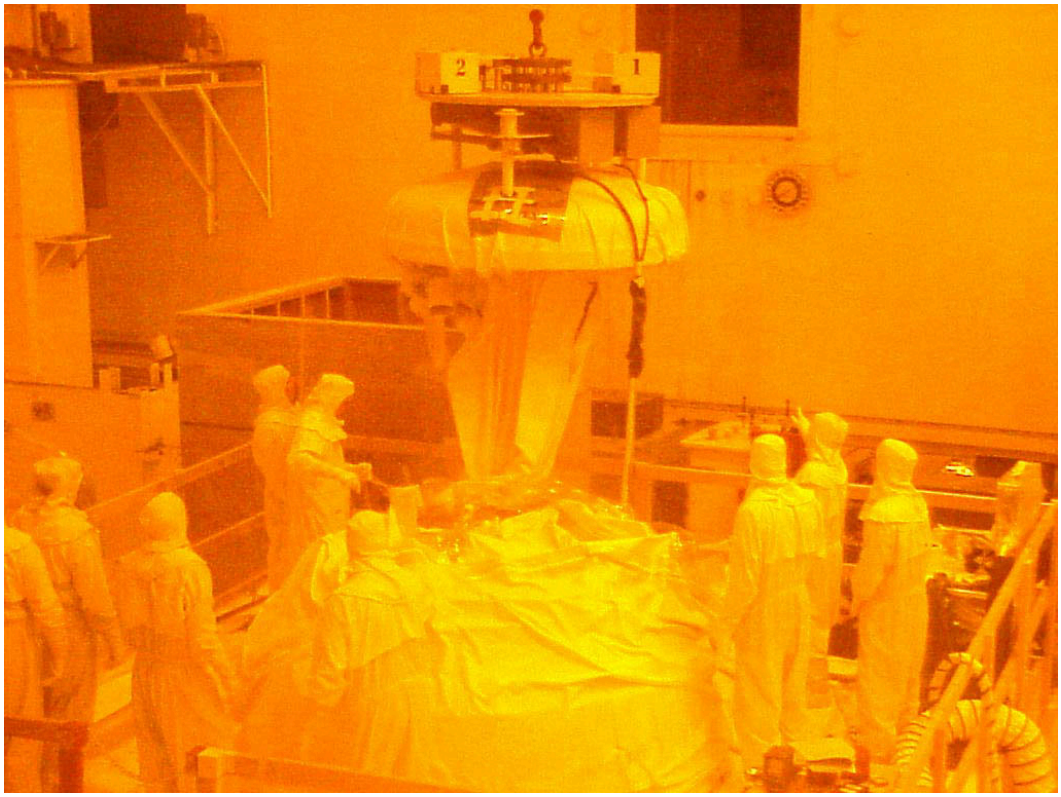
After the ICV lid was unlocked, but prior to lifting it off the cavity, workers lowered a plastic containment sleeve over the OCA and attached it to the outer vessel below the lid joint. The containment sleeve was constructed such that as each item was removed from the OCA it would remain within the containment sleeve, which could be sealed and severed at predetermined locations to maintain containment around each component.

Workers then lifted the sleeve-covered ICV lid approximately 18 in. off the cavity (see Figure 8) and smeared the inner surfaces of the lid and top surfaces of the payload. A radiological air sample was also taken from within the ICV and counted. All smears were negative (no contamination above acceptable limits). The main purpose of the air sample was to verify levels of contamination for personnel working on the payload. It should be noted that the air sample did indicate the presence of a significant amount of radon, a product of the decay of uranium in the payload contents. While not unexpected, this result confirms that the air sample came from inside the ICV cavity as intended, rather than through the HEPA vents on the plastic sleeving. Industrial Hygiene personnel took a VOC air sample, which indicated low levels of an unidentified VOC. Several volatile organic compounds were components of the waste. The air sampling results are included in Appendix A. With these results, the contamination sleeve was sealed and separated below the ICV lid, allowing it to be moved to the lid stand (see Figure 11).

With the ICV lid removed, workers performed an extensive visual, video, and photo examination of the ICV interior and the in situ payload. A boroscope was used to seek for evidence of drum rupture or leakage and to determine the integrity of the drum lids and filter vents. Extensive surface smears were performed on the inner surface of the ICV, outer surfaces of the payload, and drum surfaces where accessible through the slip sheets. No physical anomalies were detected on the ICV, payload, or individual drums. The guide tubes in the payload were checked by hand and found to be loose, indicating that the payload had not shifted during transportation or during the traffic accident.

Radiological surface smears of the ICV interior and payload exterior were all negative. Several swab smears were taken of the interior of the vent port, through which WIPP had drawn the air samples that indicated high levels of contamination. The swab smears were negative.

Workers attached the adjustable center of gravity lifting fixture to the payload through small holes in the sleeve, and lifted the payload out of the ICV and into the containment sleeve. Radiation control personnel performed continuous smears of the payload as it emerged from the vessel. All smears were negative. They then sealed and separated the sleeve, and transferred the payload into the radiological containment tent. Once in place, they used the overhead manipulator to remove the sleeve from the payload, allowing further visual examination. No abnormal conditions were observed or recorded.



PD03-0078-011

Figure 11. ICV lid separation in sleeve.

Additional smears were taken of the ICV interior and the legs of the lifting fixture. When all smears were determined to be negative, workers removed the sleeve around the ICV, allowing further visual examination. Before the lid was replaced on the ICV, smears were taken, and video and several still photographs of the ICV interior were recorded. The assembled ICV was then lifted from the OCV, and the newly exposed surfaces subjected to visual examination and surface smears. As all smears were negative, the ICV was placed into its wooden disposal box as procedurally required.

Prior to replacement of the OCV lid, workers took surface smears of newly exposed surfaces, and conducted a visual examination. No anomalies were discovered, and all smears were negative. workers took additional smears of the OCV exterior after the lid was in place, but prior to its removal from the Hot Shop. All of these smears were negative. At approximately 10:00 a.m., January 29, 2003, workers transferred the OCV out of the Hot Shop and placed it onto the transport trailer.

Finally, workers staged six SWBs in the clean area of the Hot Shop to receive drums from the payload as they were examined and released.

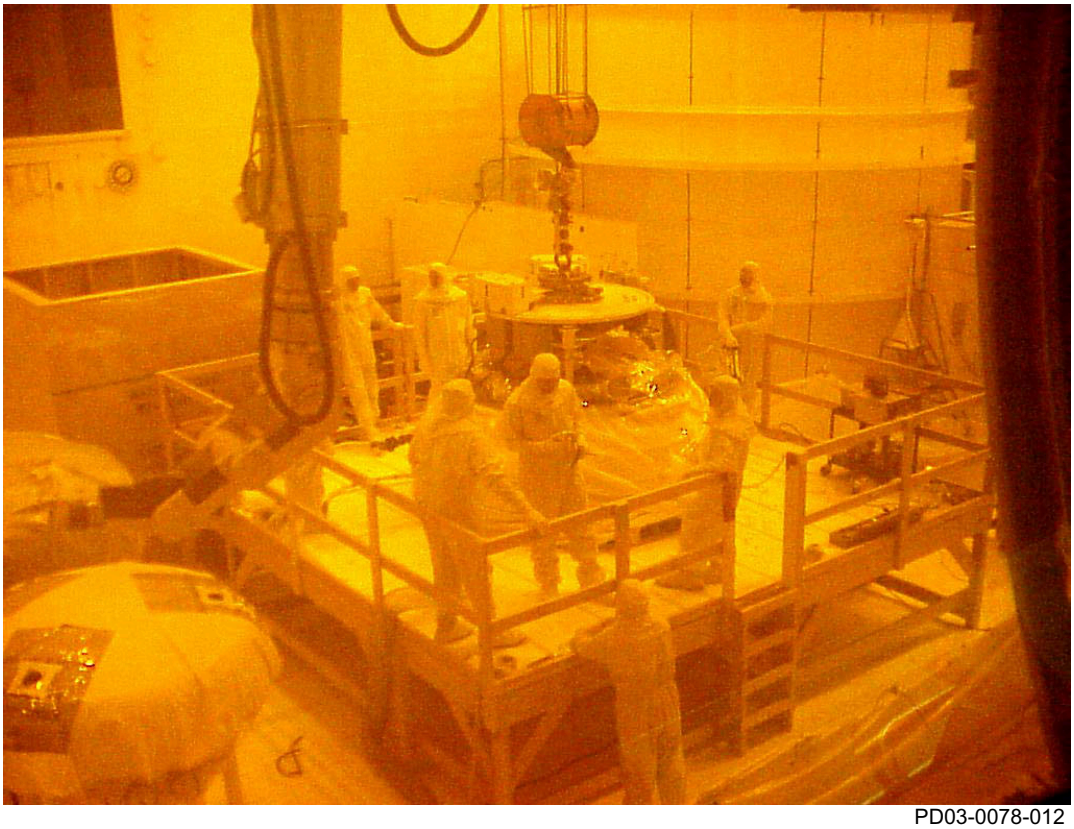
4.2.2 Drum Examination and Over-packing Operations

On January 29, 2003, at approximately 3:30 p.m., workers commenced examination and disassembly of the payload, with a 360-degree video examination of the exterior of the assembled TRUPACT-II 157 payload drums. Over the next day-and-a-half, all 14 drums were removed from the payload, examined, smeared, and over-packed in their assigned SWB. The rest of this section describes the examination process performed.

As described above, the tent was divided into 3 vestibules: payload storage, drum examination, and transfer. Workers lifted each drum was off the payload using a drum lifting device connected to a cable from an overhead crane, and moved them from the payload vestibule into the adjoining examination vestibule (see Figure 12). Prior to any further handling, workers conducted surface smears on the filter vent, top of lid, and lock ring. These samples were submitted for immediate counting while additional smears were being performed over the side and bottom surfaces. Twelve initial smears were conducted of each drum. Maps of those smears are located in Appendix A. Drum IDRF741202484 located in payload position #6 was found to be contaminated.

Workers conducting smears were especially careful to avoid the cross contamination of samples. Concurrent with and subsequent to the contamination smears, the examination team conducted a video examination to determine the integrity of the container, lid, lock ring, and filter vent. This examination included the top, bottom, and 360-degree rotation of the drum side. Any anomalies were noted in the Examination Engineers' Log (see Appendix D).

In cases where the drum lid initial smear results were negative (13 drums), workers manually checked the tightness of the filter vent and lock-ring bolt. In the case where the drum lid smears were positive (Drum IDRF741202484 in payload position #6), they performed further smears and applied fixative to the affected area before conducting the manual filter vent and lock-ring bolt checks.



PD03-0078-012

Figure 12. Lifting the payload from the ICV.

The examination was completed with an assessment of the container's integrity. Copies of the completed container integrity checklists are included in Appendix B. When the remaining smear results of the side and bottom returned negative, the drum was moved from the examination vestibule into the transfer vestibule, where it was loaded onto a cart and rolled out of the tent. The single drum with positive

smear results was bagged prior to removal from the tent. From there it was lifted by a second crane and lifting device into a clean area where a Maslin smear was performed of all surfaces of the suspended drum, before it was placed in the appropriate standard waste box. Table 2 summarizes the drum examination results.

As noted above, the initial smear indicated contamination levels above allowable limits on a localized region on the lid and filter of drum IDRF741202484. It was therefore handled differently from the other 13 drums. After the initial smears of the lid returned positive (above acceptable levels), workers performed a second follow-up smear, which also showed levels above acceptable limits. Given that smear results of the drum sides and bottom were all negative, the fixative was applied to the lid only. Following application of the fixative, the filter vent and lock ring was checked for hand tightness, similar to the other drums. The filter vent was secure, but the lock-ring bolt could be rotated slightly, about 5 degrees to the extent allowed by the tamper indicating device. The jam nut was snug against the lock chine. The drum was then bagged, taped and placed in its SWB.

The examination engineers asked the operators to read its tamper indicating seal on the bagged drum. While maneuvering the tamper indicating seal into a readable position, the operator discovered that the lock ring could be manually rotated. This action was repeated for the video record. The tamper indicating seal number was ANL-W 3963 (see Figure 13).

Table 2. ICV and drum examination summary.

Chronological Examination Order	Drum Serial Number	Payload Position	Contamination Results	Comments
ICV Cavity			-	Radon levels much higher than background found in air sample of cavity Airborne and smear alpha contamination within limits
1	IDRF004102263	2	-	adjacent to seal test port
2	IDRF004002801	3	-	adjacent to vent port
3	IDRF004101890	4	-	
4	IDRF004102254	1	-	
5	IDRF004002790	5	-	
6	IDRF741202088	7	-	
7	IDRF741202484	6	up to 110 dpm/100 cm^2 alpha on drum lid only	Loose lock bolt, loose lock ring
8	IDRF741205405	8	-	
9	IDRF741201615	9	-	
10	IDRF074700411	13	-	Loose jam nut
11	IDRF741201718	10	-	
12	IDRF741204650	14	-	
13	IDRF074700394	12	-	
14	IDRF074221338	11	-	

PD03-0078-116

Figure 13. Photo of the tamper indicating seal for IDRF741202484.

4.2.3 Abnormalities Found During the Examination

The drum removal and examination process discovered two drums with abnormal results. Drum IDRF741202484 exhibited a loose lock ring, and contamination on the drum lid that was slightly above acceptable limits (see Figure 14). Smears of accessible areas of the top and bottom of the lock-ring were within acceptable limits. A small area below the lock-ring where the drum lift fixture made contact with the drum surface could not be surveyed. However surveys of the lift fixture clamp after processing the drum were also within limits. The same situation exists for the lift fixture spacer above the lock-ring. The spacer was located away from the lid contamination area. The lock ring closure gap on Drum IDRF741202848 was estimated from the examination photographs to be 0.48 in.

Drum IDRF074700411 had a loose lock ring jam nut (see Figure 15), but the lock ring bolt was secure and contamination smears were all within acceptable limits.

All other drums were in acceptable condition with contamination smears below acceptable limits. Figure 16 shows the position of drums in their as-found orientation with respect to the ICV vent port, along with the results of radiological smears by drum sector.

PD03-0085.01

Figure 14. Drum IDRF741202484 inside the examination vestibule.

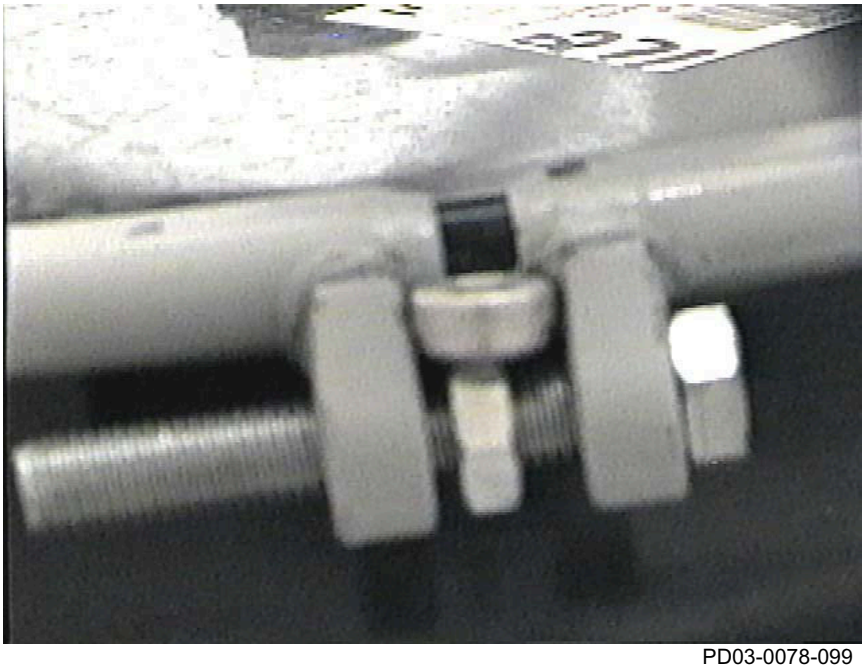


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Figure 15. Photograph of lock bolt jamb nut position on Drum IDRF074700411.

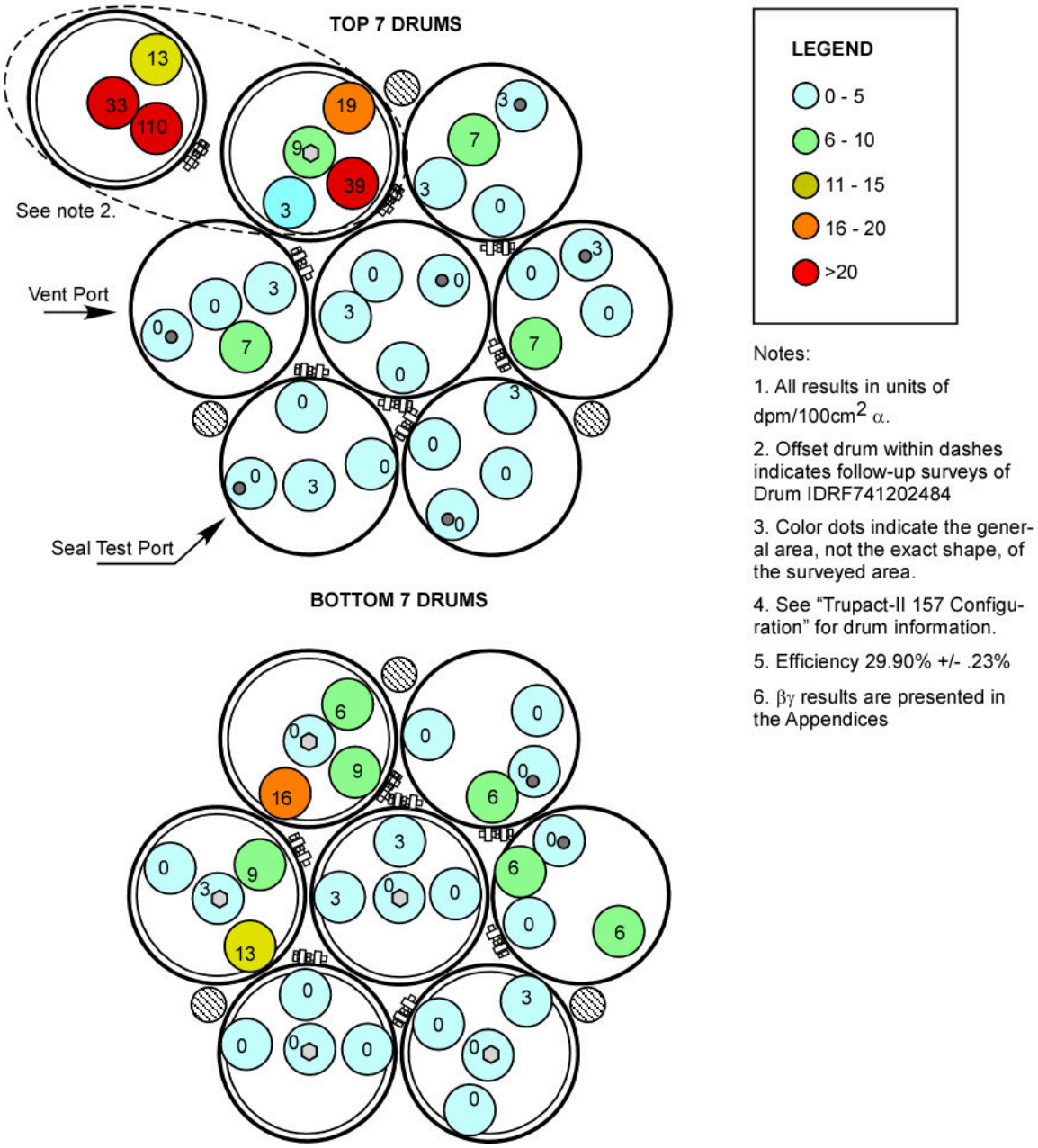

Figure 16. TRUPACT-II 157 drum lid smear results.

4.2.4 Handling of the SWBs and Removal from TAN Hot Shop

Individual drums from the payload were segregated by waste codes and over-packed into six SWBs. After discovery of contamination above acceptable levels on Drum IDRF741202484, DOE-ID requested that it be isolated in a separate SWB with three dunnage drums, and held for possible further investigation. Accordingly, on January 31, 2003, lids were installed and inspected on all SWBs except for SWB IDRFXBW030003, and the SWBs were transferred out of the Hot Shop. All the SWBs were smeared and found clean prior to transfer.

SWB IDRFXBW030003 was held in the Hot Shop until February 3, 2003, when a seventh SWB (007) was transferred into the Hot Shop to receive the contaminated drum IDRF741202484. The drum was placed into SWB IDRFXBW030007 along with three dunnage drums. Because this SWB will not be shipped to WIPP, the bag on drum IDRF741202484 was not slit prior to closure of the waste box. A fourth dunnage drum replaced the subject drum in SWB IDRFXBW030003. These boxes were then closed, inspected, smeared clean, and transferred out of the Hot Shop at approximately 3:00 p.m. February 3, 2003.

On February 4, 2003, the ICV in its disposal box and the seven SWBs were loaded onto trailers for return shipment to RWMC. The OCV had previously been loaded onto a trailer and delivered to RWMC.

4.3 Radioactive Contamination Surveys of TRUPACT-II 157

Over 350 contamination smears were taken on the inner and outer surfaces of the OCV, ICV, and individual drums during over-packing of the drums, and of the SWBs and equipment as it left the TAN Hot Shop. Dry Whatman 50 paper was used for the majority of the smears, with sticky-back cloth smears being utilized for the follow-up smears on Drum IDRF741202484. Much of this information has been reported in previous sections of this report. All the contamination smears at TAN were counted for 1 minute for alpha and beta with a currently calibrated Tennelec LB5100. Air contamination samples were counted for 10 minutes. Complete information and smear maps for the TRUPACT-II 157 recovery operations are provided in Appendix A, which also includes smear maps of Drum IDRF0741202484 in storage at RWMC, prior to transport to ANL-W, upon receipt back at RWMC, and prior to shipment out with TRUPACT-II 157.

An air sample of the ICV cavity volume was taken immediately after the ICV lid was lifted about 18 in. above the ICV bottom while it was in the sleeving, prior to any additional smears inside the ICV. The sample was taken over 15 minutes and totaled 147 ft^3. The initial count showed alpha and beta contamination, but the air sample was recounted at 30 and 90 minutes, and the calculated decay half-lives indicated that the contamination was primarily natural radon progenies, so the decision was made not to spray fixative inside the sleeving to control airborne contamination for personnel protection during the payload processing. By the following day, alpha and beta activities had lessened by 258 and 39 times, respectively. Both had decayed almost to background levels by February 3, 2003. Table 3 lists the results of initial and delayed counts of air samples.

All smears yielded results within limits for surface contamination of <20 dpm/100 cm^2 alpha and <1,000 dpm/100 cm^2 beta-gamma per Table 2-2 of PRD-183 (Reference 10) and Table D of 10 CFR 835,[11] with the exception of one drum lid; the initial smear from the lid of waste Drum IDRF741202484 was 39 dpm/100 cm^2 alpha. Two of the three follow-up smears from the top of that drum were also above contamination limits at 33 and 110 dpm/100 cm^2 alpha, respectively. Smear levels for the lid of that drum and the other drums in the top and bottom 7-pack of the payload drum were shown previously in Figure 16.

During the removal of drums from the upper pack, dirt and small stones were noted on the upper 7-pack lower slip sheet. This was expected since the slip sheets were stored in a part of the building open to the outside and the payload was transported over a gravel road between buildings prior to shipment. Some of this material was removed from the slip sheet via a sticky roller and smeared for contamination. The results were within limits (see Appendix A).

None of the other smears in the payload or in the ICV were above limits. Swabs of the inside of the ICV vent port through which the RAF samples were drawn showed no contamination. The payload slip sheets, reinforcement sheets, guide tubes, plastic shrink wrap, radiological contamination tent, and blotter paper on the Hot Shop floor were smeared for contamination after the drums were over-packed and removed from the Hot Shop. All results were within acceptable limits. A sample of the shrink-wrap was also submitted for gamma-scan; no contamination was found. The tent was stored in a box for possible future reuse as the smears indicated contamination levels were below limits.

Table 3. Results of air sample from inside of the sleeved ICV immediately after lifting the lid by ~18 in.

Date Time of Count	Count Time (min)	Alpha[a] (cpm)	Beta[b] (cpm)	Alpha (μCi/cc)	Beta (μCi/cc)	Effective Derived Air Concentration Fraction[c]
1/27/03; 1700	1	206	446	9.37e-11	1.83e-10	47
1/27/03; 1735	1	122	218	5.55e-11	8.97e-11	28
1/27/03; 1835	1	40	86.38	1.82e-11	3.55e-11	9.
1/28/03; ~0835	10	0.80	11.50	2.98e-13	1.76e-12	0.15
2/03/03	10	0.40	9.00	1.28e-13	8.80e-13	0.06

a. Efficiency for α was 28% on 1/27/03, 29.9% on 1/28/03 and 2/03/03. Counts per minute (cpm) registered by the counter is corrected to disintegrations per minute (dpm) by dividing by the counter efficiency.

b. Efficiency for βγ was 31% on 1/27/03, 44.3% on 1/28/03 and 2/03/03.

c. Per MCP-357, if the effective derived air concentration fraction is >= 0.3, then the sample is recounted after 90 minutes to determine if natural activity is indicated.

Two of the smears from the Drum IDRF741202484 lid and three smears from the inside of the ICV were analyzed for actinides by the INEEL Analytical Laboratories. The results of the INEEL analyses are provided at the end of Appendix A, along with the assay of Drum IDRF741202484 from the SWEPP Assay system. Table 4 compares the plutonium and americium results from the INEEL drum assay and analyses of smears. The smears match the original drum assay. Therefore, the contaminants in the drum lid are consistent with the drum contents. The ratios of Pu-239+Pu-240 to Pu-238 for the INEEL smears. None of the ratios of Pu-239+Pu-240 to Am-241 matched the original drum assay, which was likely because of americium stratification in the waste in the drum.

Table 4. Comparison of actinide radiochemical analyses of INEEL drum assay and smears.

	SWEPP Drum Assay	Analysis of INEEL Smears	
	Drum IDRF 741202484	Drum IDRF741202484 Lid Smears 4 and F1	Inside of ICV Smears 7, 2 and 7
Sample Date	3/6/2002	01/31/03	02/01/03
Activity Ratios	dpm/dpm	dpm/dpm	dpm/dpm
Ratio Pu-239+Pu-240 to Pu-238	39.7 ± 26.6	41.4 ± 5.8	37.1 ± 15.4
Ratio Pu-239+Pu-240 to Am-241[a]	0.065 ± 0.035	10.0 ± 1.2	9.5 ± 2.3

a. None of the ratios of Pu-239+Pu-240 to Am-241 matched the original drum assay. This was likely because of americium stratification in the waste in the drum.

4.4 List of Facts Relevant to TRUPACT-II 157 Recovery and Examination

The following facts are based on examination of the payload and analysis of the results from the TRUPACT-II 157 recovery and examination.

1. The initial WIPP RAF sample showed slight contamination of 30 dpm/spl gross alpha in an estimated 0.2 m^3 of air.

2. The follow-up WIPP RAF samples showed progressively higher TRU alpha contamination from 1,900 to 5,500 dpm/spl in an estimated 0.7 m^3 of air.

3. The initial RAF sample was collected as part of the disassembly procedure as the ICV was evacuated to about 4 in. Hg. The additional WIPP RAF samples were taken by evacuating the ICV to 12 in. Hg.

4. The tamper indicating device on the OCV vent port was visually intact, but the wire had pulled out of the brass seal, WIPP No. 0067. The tamper indicating device on the locking bolt for the OCV lock ring was still intact, which indicated that the OCV lid had not been tampered with.

5. The ICV was found to still have about 4 in. Hg vacuum after over 4 months of storage at the INEEL, attesting to the integrity and sealing capability of the TRUPACT-II shipping container.

6. An INEEL air sample of a measured volume of 4.2 m^3 (147 ft^3) from inside the ICV taken immediately after opening initially showed 206 cpm alpha/spl. Delayed counting of the sample indicated that (a) the alpha activity was primarily short-lived radon, which was expected to be present from decay of uranium isotopes in the wastes; and (b) the alpha contamination had decayed to only 0.8 cpm/spl in less than 1 day.

7. Swabs of the inside of the ICV vent port through which the WIPP RAF samples were drawn showed no contamination.

8. The guide tubes were found to be loose during the payload examination indicating that the payload had not shifted within the ICV from the vehicle accident,

9. No visual damage was evident on the OCV, ICV, aluminum honeycomb, payload or drums inside the TRUPACT-II container. These indicate that the vehicle accident did not affect the TRUPACT-II or its payload.

10. Alpha contamination above the limit of 20 dpm/100 cm^2 was found on a portion of the lid of Drum IDRF741202484 in the payload. The initial positive result was 39 dpm/100 cm^2 alpha; two subsequent positive results were 33 and 110 dpm/100 cm^2 alpha. This drum was in payload position No. 6 (see Figure 5).

11. Radiochemical analysis of Drum IDRF741202484 lid smears was consistent with the contents of that drum.

12. The locking bolt and lid locking ring on Drum IDRF741202484 were loose.

13. The lock ring gap was estimated to be 0.48 inches from the examination photographs.

14. Contamination smears of drum surfaces adjacent to and below the lock ring of Drum IDRF741202484 were within limits. The first smear on and around the filter was also within limits. The follow-up smear on and around the filter was above the alpha limit but the smear extended farther onto the drum lid surface.

15. A jam nut on an uncontaminated drum (IDRF074700411) was loose; the lock bolt was tight. This drum was repackaged by ANL-W in April 2002. This drum was in position No. 13 in the payload, immediately below drum IDRF741202484.

16. All of the drum filters were secure.

17. No alpha contamination above allowable surface contamination limits of <20 dpm/100 cm^2 alpha was found elsewhere in the payload, slip sheets, guide tubes, shrink wrap, inside of the ICV, or inside the ICV vent port.

5. RESULTS

The recovery and examination of TRUPACT-II 157 provided the following key results:

- The vehicle accident did not compromise the integrity of the shipping container as evidenced by the following:
  - No physical damage was observed on the OCV or ICV
  - No contamination was found on the exterior or interior of the OCV
  - No contamination was found external to the ICV.
- The vehicle accident did not cause the contamination found in TRUPACT-II 157 as evidenced by the following:
  - No damage was found on the ICV lid or the honeycomb spacers, slip sheets, or guide tubes inside the ICV
  - No physical damage was evident on the payload
  - No shifting of the payload was apparent.
- The contamination found on Drum IDRF741202484 was contained within the ICV.
- The ICV was found to be under vacuum after over 4 months storage prior to initiating recovery operations. This attests to the integrity and sealing capability of the TRUPACT-II shipping container.
- Drum IDRF741202484 was found to have localized contamination on top of the drum lid. The contamination found was up to 110 dpm/100 cm^2 alpha, which exceeds the limit of 20 dpm/100 cm^2 alpha.
  - Radiological analysis of the contamination showed it to be consistent with the drum's radiological contents.
- Drum IDRF741202484 was found to have a loose lock-ring bolt, such that the lock ring could be rotated by hand.
- Contamination smears of drum surfaces adjacent to and below the lock ring of Drum IDRF741202484 were within limits. The first smear on and around the filter was also within limits. The follow-up smear on and around the filter was above the alpha limit but the smear extended farther onto the drum lid surface.
- The results of the examination did not conclusively identify the exact leakage point from drum IDRF741202484. However, it was confirmed that this drum was the source of the contamination.
- A loose lock-ring-bolt jam nut was also discovered on drum IDRF74700411, although the lock-ring bolt was secure.
  - This drum did not have contamination above limits.

6. RECOVERY OPERATIONS LESSONS LEARNED

The recovery operation was the first time a contaminated payload was recovered from a TRUPACT-II. The TAN Hot Shop provided an excellent facility and staff for the recovery and examination operations, with appropriate expertise, tooling, and facilities in material handling, radiological control, and payload examination for efficient, uncomplicated processing of the payload. The following general lessons-learned were noted with the recovery. These lessons should be applied in the event that disassembly and recovery of another TRUPACT payload should ever become necessary.

- Mockup training proved highly valuable in streamlining and improving the recovery procedure, and in preparing the crew for the required tasks. Several efficiencies in the procedure and design features of the containment were directly attributable to the mockup exercises.

- Direct, early operator participation in the development of the recovery procedures enhanced the operational safety and efficiency.

- The INEEL radiological work control scheme (TRUPACT sleeving and three-section work tent) provided significant worker protection and efficiencies for the work process as demonstrated by the safe and rapid completion of the project activities in the TAN Hot Shop.

- Open communication and coordination between the INEEL, DOE-ID, and CBFO during the planning, review, approval, and recovery stages allowed the recovery to be conducted safely and within operational constraints. The efficiency of recovery operations could be enhanced by the addition of a CBFO representative with signature authority onsite during recovery operations. This would improve the timeliness of the team's response to procedural changes necessitated by recovery findings.

- An operator should be added to the recovery crew with the sole function of taking still photos of processes and items of interest. A camera should be made available with the acceptance that it may become contaminated.

7. REFERENCES

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4. Adams, M. L, DOE-ID, letter to R. A. Rosell, BBWI, "Recovery Efforts for Trupact-II Shipping Container 157 (EM-WM-02-205))," CCN: 36810, October 11, 2002.

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7. TPR-6233, "TRUPACT-II 157 Payload Disassembly Operations at TAN," Test Area North Operations, Revision 1, January 22, 2003.

8. INTEC-QA-0208, "Quality Inspection of TRUPACT-157 Unloading and Loading Recovery Operations at Test Area North (TAN), November 27, 2002.

9. INTEC-QA-0221, Quality Inspection of TRUPACT-157 Payload Disassembly Operations at Test Area North (TAN), February 1, 2003.

10. PRD-183, "Radiation Protection – INEEL Radiological Control Manual." Radiological Control, Revision 6, July 6, 2000.

11. 10 CFR 835 Appendix D, "Surface Contamination Values," February 4, 2002.

Appendix A

WIPP Reports, Accident Report, and Results of Surface and Airborne Contamination Measurements

Electronic Copy of Appendix A

"Italiano, Marc - DOE" <Marc.Italiano@wipp.ws>

10/09/02 09:15 AM

To: "Rod DOE-ID 'Taft (E-mail)" <taftra@id.doe.gov>, "Tom Clements (E-mail)" <TLC@inel.gov>
cc:
Fax to:
Subject: FW:

> -----Original Message-----
> From: Wu, Chuan-Fu - DOE
> Sent: Wednesday, October 09, 2002 8:03 AM
> To: Italiano, Marc - DOE
> Subject:
>
> <<TRUPACT-157-Summary(9-9-02).doc>>
>
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Barry,
You wanted a copy of this.
Bob.

TRUPACT-II 157 Receipt Narrative and Radiological Data Summary
(9/9/02)

TRUPACT-II 157 was received with TRUPACT-II 151 (shipment number IN020271) at the WIPP site at 6:30, August 25 (Sunday), 2002. Upon receipt, shipping documentation was reviewed and initial radiological surveys completed. No removable surface contamination was found on the exterior of either TRUPACT-II shipping casks. Both TRUPACT-IIs were then staged in the parking area behind the Waste Handling Building for subsequent unloading.

At 13:05, procedure WP 05-WH1011, *CH Waste Processing*, was initiated for TRUPACT-II 157. TRUPACT-II 157 was unloaded from the trailer and staged in the CH Bay West TRU Dock north position in the Waste Handling Building.

The TRUPACT-II consists of an Outer Containment Assembly (OCA), an Outer Containment V(OCV) and an Inner Containment Vessel (ICV). The OCV and ICV provide dual containment and are independently sealed. Payload containers (in this case, 55-gallon drums) with varying levels of radioactivity are carried inside the ICV. To avoid potential exposure to workers handling the containers, multiple checks for radioactivity are performed at each step of the unloading and waste handling operations. Checks are made for both surface contamination that could be dislodged during handling and become airborne, as well as for any airborne radioactivity that might be present inside the TRUPACT-II shipping casks before they are opened:

1. Before opening the OCA lid, the exterior of the OCA is carefully surveyed for surface radioactive contamination, and if elevated levels are not detected, then
2. The OCA lid is removed and surveys of the inner surface of the OCV and the outer surface of the ICV are performed, and if elevated levels are not detected, then
3. Before opening the ICV lid, an air sample is drawn from the inside of the ICV through a Radiological Assessment Filter (RAF). The RAF is counted for any detectable levels of man-made airborne radioactivity. If no man-made radioactivity is present, then
4. The ICV lid is removed and surface contamination surveys of the interior surfaces of the ICV lid and the payload containers are performed.

Unloading operations of TRUPACT-II 157 continued until Step 2.4.22 of WP 05-WH1011 was reached. At this step, an air sample was drawn from the ICV through the RAF. The RAF was counted on an Eberline Alpha-6 Continuous Air Monitor (CAM) and indicated 5.7 cpm (counts per minute) at 13:34 and 5.3 cpm at 13:40. With a counting efficiency of approximately 20 %, the counting results were equivalent to approximately 27 to 30 dpm alpha activity. The peak channel on the Alpha-6 for these measurements was Channel 112 in the Region of Interest (ROI) corresponding to the alpha radiation energy for Pu. The WIPP Central Monitoring Room Operator (CMRO) was notified and waste processing on TRUPACT-II 157 was stopped. The radiological survey report for this process was SRV-02-2480.

The RAF sample was transferred to the WIPP onsite Radiochemistry Laboratory at 18:07 for further measurement and analysis. A 10-minute gross alpha/beta counting (using a gas

proportional counter) at 19:46 indicated an alpha reading of approximately 30 dpm, a beta reading of ~3.4 dpm. A separate measurement by a gamma spectrometer indicated an Am-241 activity of approximately 3 dpm. Destructive chemical separation of the RAF (sample ID TP157RAF) started on August 26 (Monday).

The on-shift RadCon Engineer notified the CH RadCon Manager. The CH RadCon Manager instructed the crew to leave the ICV lid in place. At 14:37 Waste Handling personnel suspended processing of TRUPACT-II 157, for further checking and testing to determine if airborne contamination was present inside the ICV.

The WIPP Integrated Waste Operations Manager, senior staff, and the Carlsbad Field Office (CBFO) were notified.

TRUPACT-II 157 was left in the West TRU Dock north position with the OCA lid removed, the ICV lid still sealed, the ICV lid locking ring rotated to the unlocked position, the Inner Vent Port Plug installed and a vacuum of 4" Hg maintained on the ICV. TRUPACT-II 157 was stored in this position overnight until all required personnel could be assembled and a plan of action could be developed to proceed.

On August 26 morning, a *Work Instruction for Additional TRUPACT-II 157 Radiological Assessment Filter Collection* was developed. At 13:00 a pre-job briefing was held for obtaining these additional samples from the ICV. These samples were obtained through the RAF assembly. The first follow-up sample was counted at 14:40 on an Alpha-6, indicating 240 cpm in the ROI corresponding to Pu. The filter sample was then transferred to the Radiochemistry Laboratory at 14:56 for further analysis (sample ID 157RAF-2).

The gross Alpha/Beta counting of sample 157RAF-2 showed an alpha reading of 2530 dpm and a beta reading of 1100 dpm. Gamma spectrometry measurement showed 176 dpm of Am–241.

A second additional RAF sample obtained from the ICV was counted on the Alpha-6 at 16:10, indicating 465 cpm in the ROI corresponding to Pu. This sample was then transferred to the Radiochemistry Laboratory at 16:55 (sample ID 2nd PULL). The Alpha/Beta counting showed 4382 dpm alpha and 1450 dpm beta. Gamma spectrometry measurement indicated 309 dpm of Am-241.

A third additional RAF sample was obtained and counted on the Alpha-6 at 18:02. The sample showed 890 dpm in the Pu ROI. This sample was also transferred to the Radiochemistry Laboratory at 18:09 (sample ID 3rd RAF). The Alpha/Beta counting results from the laboratory indicated 6030 dpm alpha and 794 dpm beta. Gamma spectrometry measurement from this third follow-up sample indicated 464 dpm of Am-241. This RAF was analyzed radiochemically on August 27.

Both the initial sample (TP157RAF) and additional RAF samples, were collected by drawing air through a filter, which reduced the absolute pressure inside the ICV. The initial sample dropped the pressure by 4" Hg. The three replicate samples each dropped the pressure by ~12" Hg. Although detailed measurements of sample volume were not attempted, these pressure drops correspond to air sample volumes of roughly 0.2 and 0.7 m^3, respectively.

After each sample was collected, air was allowed to re-enter the ICV at a controlled rate (~ ½ – 1 minute to equalize the pressure drop). The sampling port valve was closed before gage pressure returned to zero (thereby assuring that a small negative pressure was maintained for contamination control). Initial counting of the additional RAF samples included radioactivity from radon (Rn) decay progenies (Note: the effective half-life of Rn progenies is approximately 30 minutes). Proportional gas counting results obtained several hours after sample collection indicated that alpha radioactivity (without Rn progenies) of the additional RAF samples was approximately 1900 dpm, 3300 dpm, and 5500 dpm separately. To check the radioactivity level of Rn progenies, an air filter collected at 15:54 on August 26 by a Portable Air Sampler (PAS) was counted several times. The counting results verified that: (1) the Waste Handling Building ambient air contained Rn progenies, and (2) it did not contain long-lived alpha emitters.

The radiological survey report for the process of collection additional RAF samples was SRV-02-2493.

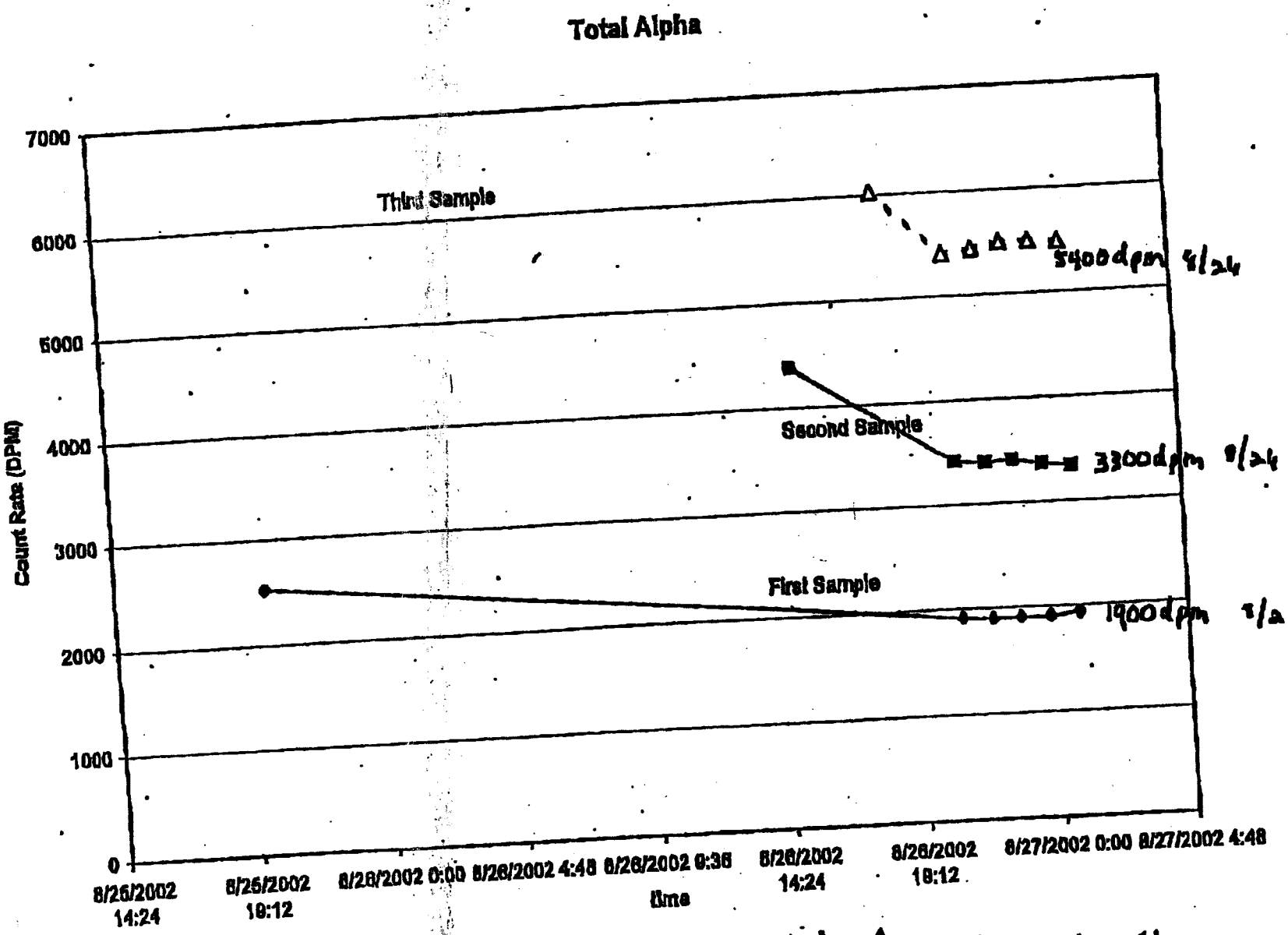
The following table summaries the Alpha-6 counting, Alpha/Beta counting, and gamma measurement results of the initial RAF (TP157RAF) and the 3 additional RAFs (157RAF-2, 2nd Pull, and 3rd RAF), radiochemical data for plutonium of samples TP157RAF and 3rd RAF were also listed.

The radiochemical results from the onsite Radiochemistry Laboratory were available for the initial RAF at 7:00 on August 27 (Tuesday). At that time, the CBFO management determined that the airborne radioactivity inside the ICV represented an unacceptable level and directed operations personnel to begin the processing of resealing TRUPACT-II 157 and returning it to INEEL.

Table 1 – Summary of Radiological Assessment Filter Samples from TRUPACT-II 157

Sample Designation	Sampling Date & Time	Alpha-6 CAM[1] (cpm)	Gross Alpha[2] (dpm)	Gross Beta[2] (dpm)	Am-241 γ-spec.[3]	Pu-238[4]	Pu-239/240[4]
TP157RAF	8/25/02 13:34	5.7, 5.3	29.7	3.4	2.6	0.7	19.9
157RAF-2	8/26/02 14:40	240	2530 (~1900)[5]	1090	176	Not yet analyzed	Not yet analyzed
2nd PULL	8/26/02 16:10	465	4380 (~3300)[5]	1450	309	Not yet analyzed	Not yet analyed
3rd RAF	8/26/02 18:02	890	6030 (~5500)[5]	794	464	132	1640

[1] Gross count rate (cpm) in the Pu region of Alpha-6 CAM (efficiency ~20%)
[2] Initial counting from the gas proportional counter – values given in dpm
[3] Counted using a geometry-calibrated gamma spectrometer, dpm
[4] Results from radiochemistry extraction and alpha spectrometry, dpm
[5] Gross alpha dpm several hours after sample collection (without Rn decay progenies).



initial sample 30dpm 8/25

Samples are taken of the air space inside the TCU

NEW MEXICO STATE POLICE & SHERIFF

REPORTING DEPARTMENT

STATE OF NEW MEXICO
UNIFORM ACCIDENT REPORT

CO 697

ON PRIVATE PROPERTY ☐ | FATAL ☐ | INJURY ☒ | PROPERTY DAMAGE ONLY ☐ UNDER $500 ☐ $500 OR MORE | HIT AND RUN ☐

SHEET 01 OF 04 SHEETS

DATE OF ACCIDENT	Military Time	CITY OCCURRED IN	COUNTY
MO 08 / DAY 25 / YR 02	0130	Carlsbad	Eddy

DAY OF WEEK: SUN X | M | T | W | T | F | SAT

OCCURRED ON: (INCLUDE NO. & NAME) US 62-180

AT INTERSECTION WITH: N/A

OTHER LOCATION .2 ☐ FEET ☒ MILES

PERMANENT LANDMARK -COUNTY LINE -INTERSECTION

N S X W OF: US 62-180/State Road 200

FOR USE BY ORIGINATOR

Incident #02-092067

MILEPOST LOCATION 396 ☒ FEET ☐ MILES

N S X W OF MILEPOST NO: Mile Marker 39

ACCIDENT OCCURRED ☒ On Roadway ☐ Off Roadway

ACCIDENT CLASSIFICATION ☐ Overturned ☐ Other N-Col. ☐ Pedestrian ☒ Other Vehicle ☐ Vehicle On Other Rdwy ☐ Parked Veh. ☐ R.R. Train ☐ Pedalcyclist ☐ Animal ☐ Fixed Object ☐ Other Object

VEHICLE NO. 1

HEADED N S X W ON: US 62-180

Posted Speed: 65 | Safe Speed: 65

Driver's Full Name: Hanway, Jerry E.

Address: 902 Airport, Carlsbad, NM

Zip Code: 88220 | Phone: 505 887-6010

Driver License Number: 030520947 | State: NM | Type: A | Restrictions: None | Expires: 10-29-2004 | Date of Birth: Mo 09 / Day 29 / Yr. 45

Seat Position Code: LR LF CR CF RR RF OTHER

Social Security Num.: 585-14-2032

Occupation: Truck Driver

Seat Pos.	Occupant's Name	Occupant's Address/Zip Code	Seat Belt	Helmet Yes No	Age	Sex	Injury
Other	Rita K. Hanway	902 Airport, Carlsbad, NM 88220	6	NA	56	M	0
			5	NA	47	F	0

Vehicle Yr.: 1997 | Vehicle Make: KW | Color: White | Body Style: D6 | Removed To: Destination | Removed By: Driver

License Yr.: 3/03 | State: WY | License Number: 04104 | US DOT/ICC/SCC Numbers: 1029193 | VIN: 1XKDD99X7R739335 | Owner's Telephone: 505-628-0468

Owner's Name: Cast Transport | Owner's Address: 985 Havana, Hendeson, CO. | Zip Code: 80640

Insured By: (Name of Company): Gulf Insurance Group | Policy Number: GA2835948 | Liability Insurance: ☒ Yes ☐ No | VEHICLE DAMAGE: HEAVY ☐ MODERATE ☐ LIGHT ☐

VEHICLE NO. 2-PEDESTRIAN

HEADED N S X W ON: US 62-180

Posted Speed: 65 | Safe Speed: 65

Driver's Full Name: Alvidrez, Isreal C.

Address: RT 1, Box 177-I, Seminole, TX

Zip Code: 79360 | Phone: 915 758-5684

Driver License Number: 06066716 | State: TX | Type: C | Restrictions: None | Expires: 10-25-2004 | Date of Birth: Mo 10 / Day 25 / Yr. 82

Seat Position Code: LR LF CR CF RR RF OTHER

Social Security Num.: 462-63-0733

Occupation: Key Energy

Seat Pos.	Occupant's Name	Occupant's Address/Zip Code	Seat Belt	Helmet Yes No	Age	Sex	Injury
	None		6	NA	19	M	B5/C

Vehicle Yr.: 1998 | Vehicle Make: Dodg | Color: White | Body Style: PK | Removed To: Short's Body Shop-Carlsbad NM | Removed By: Short's Towing

License Yr.: 3/03 | State: TX | License Number: RL-S47 | US DOT/ICC/SCC Numbers: N/A | VIN: 1B7HC16XXWS688106 | Owner's Telephone: 915-758-5684

Owner's Name: Epifanio Alvidrez | Owner's Address: RT 1, Box 177-I, Seminole, TX | Zip Code: 79360

Insured By: (Name of Company): State Farm | Policy Number: unknown | Liability Insurance: ☒ Yes ☐ No | VEHICLE DAMAGE: HEAVY ☒ MODERATE ☐ LIGHT ☐

INJURED First Aid Rendered By: Carlsbad EMS

Injured Taken To: Carlsbad Medical Center | By: Carlsbad EMS

DESCRIPTION OF PROPERTY AND DAMAGE | Owner Phone

OTHER PROPERTY INVOLVED: None | Owner's Name | Owner's Address/Zip Code | Telephone

WITNESS

Name	Age	Address	Telephone
None came forward at scene			
None to date			

INJURY CODES

K- Killed
- K1 Head
- K2 Chest
- K3 Neck
- K4 Other

A- Incapacitated- Carried From Scene
- A1 Head
- A2 Chest
- A3 Back
- A4 Neck
- A5 Arms/Legs

B- Visible Injury
- B1 Head
- B2 Chest
- B3 Back
- B4 Neck
- B5 Arms/Legs

C- Complaint- No Visible Injury

O- No Apparent Injury

RESTRAINT CODES

1. Restraints - Not Installed
2. Restraints - Not Used
3. Lap Belts - Used
4. Shoulder Harness - Not Used
5. Shoulder Harness - Used
6. Belt & Harness - Used
7. Ejected From Vehicle
8. Child Restraint Device
   - A. Used Properly
   - B. Not Used
   - C. Used Improperly
9. Airbag Deployed
   - A. Other Restraints Not Used
   - B. Other Restraints Used

COMPLETE FRONT OF FORM. 2. REMOVE CARBON AND TISSUE PAPER. 3. TURN OVER AND COMPLETE REVERSE SIDE

VEHICLE NO. 1

VEHICLE NO. 2 - PEDESTRIAN - OTHER

ROAD-WEATHER

LIGHTING (Check One)	WEATHER (Check One)	ROAD COND. (Check One For Each)	ROAD SURFACE (Check One For Each)	TRAFFIC CONTROL (Check One For Each)	ROAD CHARACTER (Check One)	ROAD DESIGN (Check One Or More For Each)	
☐ Daylight	☒ Clear	☒ ☒ Dry	☐ ☐ Paved Unstripped	☐ ☐ No Passing Zone	☒ Straight	☐ ☐ 1 Lane	☐ ☐ One Way
☐ Dawn	☐ Raining	☐ ☐ Wet	☐ ☐ Paved Center Stripe	☐ ☐ Stop Sign	☐ Curve	☒ ☒ 2 Lanes	☐ ☐ Ramp
☐ Dusk	☐ Sleeting	☐ ☐ Snow	☒ ☒ Paved Center & Edgeline	☐ ☐ Traffic Signals	GRADE (Check One)	☐ ☐ 3 Lanes	☐ ☐ Freeway
☐ Dark Lighted	☐ Fog	☐ ☐ Ice	☐ ☐ Unpaved	☐ ☐ Yield Sign	☐ Level	☐ ☐ 4 Lanes	☐ ☐ Undiv.
☒ Dark - Not Lighted	☐ Dust	☐ ☐ Loose Material		☐ ☐ R.R. Gate	☐ Hillcrest	☐ ☐ Undivided	☐ ☐ Alley
☐ Other	☐ Wind	☐ ☐ Other		☐ ☐ 4 Way Stop	☒ On Grade	☐ ☐ Physical Div.	☒ ☒ Other
	☐ Other			☒ ☒ Flashers	☐ Dip	☒ ☒ Painted Div.	☐ ☐ Const. Zone
				☒ ☒ No Controls			
				☐ ☐ Other			

EVENT

APPARENT CONTRIBUTING FACTORS (Check One Or More For Each)

☐ ☐ Excessive speed	☐ ☒ Following too closely	☐ ☐ Defective tires
☐ ☐ Speed too fast for conditions	☐ ☐ Made improper turn	☐ ☐ Other mechanical defective
☐ ☐ Failed to yield right of way	☐ ☐ Driver inattention	☐ ☐ Road defect
☐ ☐ Passed stop sign	☒ ☐ Under influence of alcohol	☐ ☐ Other - No driver error
☐ ☐ Disregarded traffic signal	☐ ☐ Other improper driving	☐ ☐ Traffic control not functioning
☐ ☐ Drove left of center	☐ ☐ Pedestrian error	☐ ☐ Improper lane change
☐ ☒ Improper overtaking	☐ ☐ Inadequate brakes	☐ ☐ Improper backing
☐ ☐ Avoid no contact vehicle	☐ ☐ Driverless moving vehicle	☒ ☐ None
☐ ☐ Avoid no contact - other	☐ ☐ Defective steering	☐ ☐ Vehicle skidded before braking

WHAT DRIVERS WERE DOING (Check One For Each)

☒ ☐ Going Straight	☐ ☐ Stopped for traffic
☐ ☒ Overtaking - Passing	☐ ☐ Stopped for sign/signal
☐ ☐ Right Turn	☐ ☐ Start in traffic lane
☐ ☐ Left Turn	☐ ☐ Start from park
☐ ☐ U Turn	☐ ☐ Parked
☐ ☐ Slowing	☐ ☐ Other
☐ ☐ Backing	

DRIVER

DRIVER OR PEDESTRIAN SOBRIETY (Check One Or More For Each)

☐ ☒ Consumed Alcohol	☐ ☐ Consumed a Controlled Substa ce
☒ ☐ Had Not Consumed Alcohol	☐ ☐ Sobriety Unknown
☐ ☐ Consumed Medication	☐ ☒ Tested By Instrument
☐ ☐ Field Sobriety Test	☐ ☐ Eye Gaze / Nystagmus

DRIVER OF PEDESTRIAN PHYSICAL CONDITION (Check One Or More For Each)

☐ ☐ Fatigue-Asleep	☐ ☐ Medication
☐ ☐ Eyesight Imp.	☐ ☐ Amputee
☐ ☐ Hearing Imp.	☒ ☒ No App. Defects
☐ ☐ R.I.	☐ ☐ Other Physical Impairment*

*Specify

PEDESTRIAN

PEDESTRIAN ACTION

At Intersection	Not At Intersection	
☐ ☐ With Signal	☐ ☐ From Behind Obstruction	☐ ☐ Walking Against Traffic
☐ ☐ Against Signal	☐ ☐ No Crosswalk	☐ ☐ Standing
☐ ☐ No Signal	☐ ☐ Crosswalk	☐ ☐ Pushing or Working on Vehicle
☐ ☐ Diagonal	☐ ☐ Walking W/ Tr.	☐ ☐ Playing In Road
	☐ ☐ Other*	

*Specify None

Diagram Drawn By: Officer Jason Waller

Measurements By: Officer Jason Waller

Leave Blank

DIAGRAM

See Attached Diagram

Indicate North By Arrow

Use Supplemental Diagram/Narrative Sheet for additional information

NARRATIVE (Describe how accident occurred)

See Attached Narrative

TRAILER OR TOWED VEHICLES

	Year	Make	Lic Yr - State - Number	Type
TOWED BY VEH.#1 1	1990	Alloy	E28197-US Government	Tru-Pac
TOWED BY VEH.#2 NA				

ENFORCEMENT ACTION

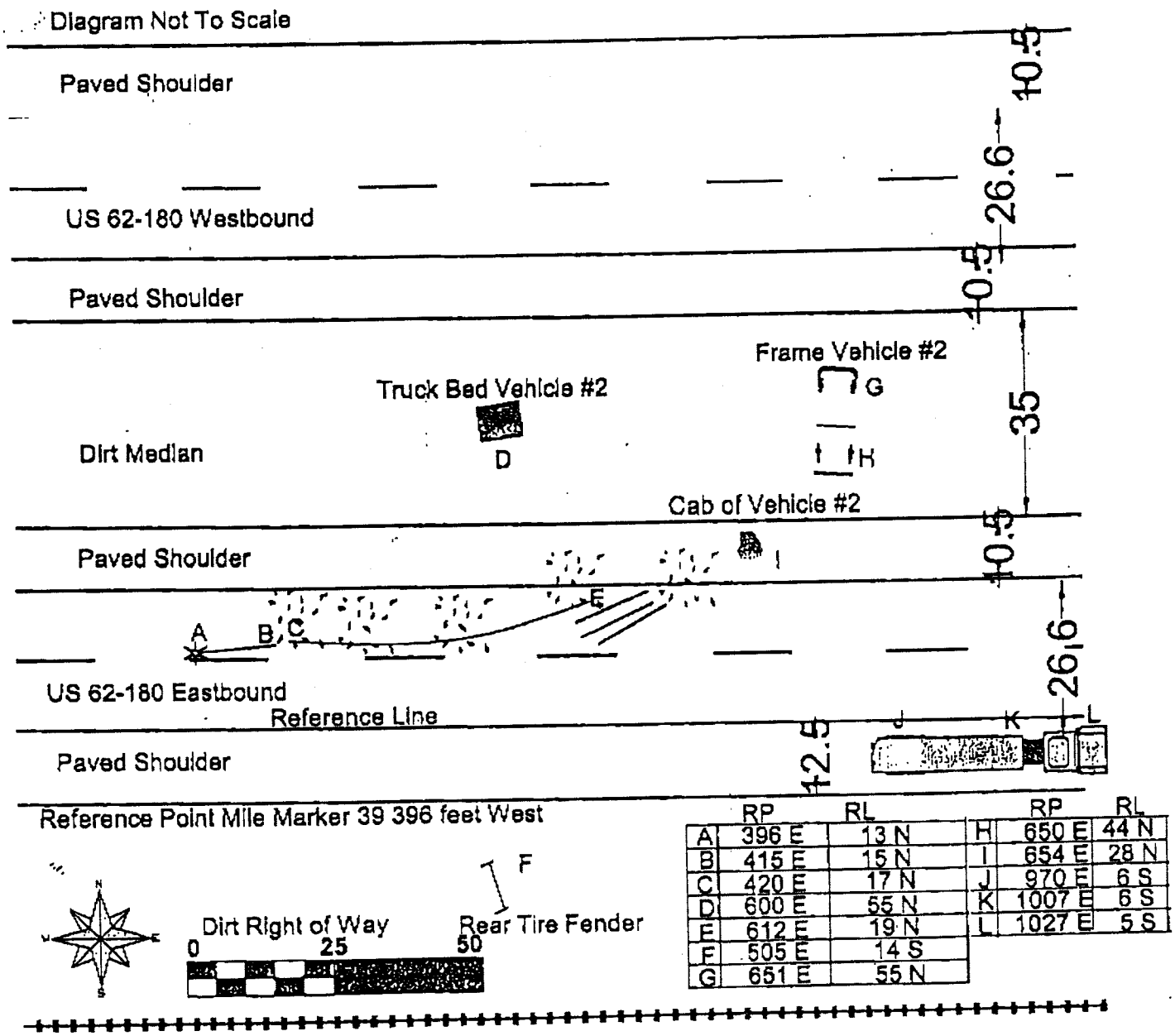
VEH. NO.	Name	Violation	W	B	C	Citation No.
2	Isreal Alvi rez	DWI 2nd Offense		X	X	717210
2	Isreal Alvi rez	Careless Driving		X	X	3516728
2	Isreal Alvi rez	Driver to be licensed		X	X	3516730

Time Notified	Time Arrived	Notified By	Supvr. at Scene	Checked By
0145	0207	well State Police	Lt. Cottrell	

Officer's Signature: Jason Waller

ID No.	District	Date of Report
2506	03	08-25-02

New Mexico State Police		Injury Accident Involving WIPP Truck		Case Number
Drawn By	Date Drawn	Incident Date:	8/25/02	02-092067
Officer Jason Waller	8/26/02	Location:	US 62-180 Mile Marker 39	Scale: 1 in : 28 ft



	RP	RL
A	396 E	13 N
B	415 E	15 N
C	420 E	17 N
D	600 E	55 N
E	612 E	19 N
F	505 E	14 S
G	651 E	55 N

	RP	RL
H	650 E	44 N
I	654 E	28 N
J	970 E	6 S
K	1007 E	6 S
L	1027 E	5 S

STATE OF NEW MEXICO UNIFORM ACCIDENT REPORT

SUPPLEMENTAL DIAGRAM/NARRATIVE

NTD-13075
EV. 7/90

Date	Time	Location	County
08-25-2002	0130	US 62-180 Mile Marker 39	Eddy

Driver No. 1	Driver No. 2	City	Street
Jerry E. Hanway	Isreal C. Alvidrez	04	04

ASSIGNMENT: On August 25, 2002 at approximately 0145 hours, I was dispatched by Roswell State Police Dispatch to US 62-180 mile marker 39 in reference two a two vehicle accident with injuries. One of the vehicles involved was a WIPP transport truck. While en-route, I advised dispatch to contact the Lieutenant and Captain and call the Headquarters ERO on call due to the WIPP truck being involved. I was also advised that Carlsbad Police Department and Fire Department were on scene and that the Tru-pac containers were not compromised or damaged in anyway.

SCENE: Upon arrival to the scene at 0207, I observed the WIPP truck parked on the south shoulder facing east on US 62-180. The WIPP truck was not damaged and there was slight damage to the left rear of the trailer. The second vehicle was in 3 pieces in the median between the east and west bound lanes and had heavy fire damage. Pictures of both vehicle and scene were taken. I also made contact with Lt. Cron the Headquarters ERO on call and he advised that this was not a Haz-Mat incident and to handle as a normal motor vehicle accident with injuries.

DRIVER #1 STATEMENT: See attached written statement of driver identified as Jerry Hanway.

PASSENGER #1 STATEMENT: Identified as Rita Hanway, passenger was asleep at the time of the accident in the sleeper of the truck and did not see the accident.

DRIVER #2 STATEMENT: Driver #2 was identified at the scene as Isreal Alvidrez. Mr. Alvidrez stated that he was east bound on US 62-180 from Carlsbad, NM headed towards Seminole, TX. He was traveling at 65 to 70 miles per hour in the right lane. Mr. Alvidrez stated that he saw the truck in front of him and was attempting to pass the truck in the left lane, when he clipped the left rear of the trailer while changing lanes to pass. While I spoke to Mr. Alvidrez at the scene I could smell and odor of alcohol coming from his breath. He also admitted to drinking at least 3 beers (Corona) and was transporting a 12-pack of Corona beer in the truck, which was located at the scene with several bottles missing.

INVESTIGATION: The investigation revealed that there was no fault of driver #1. Driver #2 was intoxicated while operating a motor vehicle. Mr. Alvidrez failed to properly change lanes while attempting to pass vehicle #1. Vehicle #2 collided with the left rear of the trailer being pulled by vehicle #1. There were no skid marks left from either vehicle in an attempt to stop or brake prior to impact.

INJURIES: No injuries to the driver or passenger of vehicle #1. Driver #2 sustained lacerations to his arms and side and also complained of back pain, he was transported to Carlsbad Medical Center by Carlsbad EMS and later released.

ENFORCEMENT: Driver #1 none. Driver #2 was arrested after being released from the hospital by New Mexico State Police Officer Monica Martinez. He was charged with DWI 2nd offense, Careless Driving, Driver to be Licensed, Minor in Possession of Alcohol and booked into the Eddy County Detention Center.

OTHER INFORMATION: The WIPP truck, trailer and Tru-pac containers were inspected at the scene by DOE, Westinghouse and MTD personnel to ensure the safe travel of the waste shipment to the WIPP site. No problems were located with the truck, trailer or Tru-pac containers and the shipment was escorted to WIPP by MTD Officer O'Rielley to ensure it's safe arrival at WIPP.

Officer Jason Waller #2506
New Mexico State Police 08-25-2002

Thomas L Clements

03/24/2003 11:38 AM

To: Barry H O'Brien/BHO/CC01/INEEL/US@INEL, Kip E Archibald/ARCHKE/CC01/INEEL/US@INEL, Jeffrey M Lacy/LACYJM/CC01/INEEL/US@INEL
cc: Bobby A Picker/BAP/CC01/INEEL/US@INEL, Geneine D Staymates/STAYGD/CC01/INEEL/US@INEL, Jerry L Wells@Exchange
Fax to:
Subject: CBFO Accident Paper with Regards to T-157

fyi.

Thanks Jerry.

----- Forwarded by Thomas L Clements/TLC/CC01/INEEL/US on 03/24/03 12:06 PM -----

Jerry L Wells@Exchange

03/24/03 11:11 AM

To: Thomas L Clements/TLC/CC01/INEEL/US@INEL, Robert D Newbry@Exchange
cc: Jerry L Wells@Exchange
Fax to:
Subject: CBFO Accident Paper with Regards to T-157

Tom,
Attached is the accident paper CBFO generated with regards to T-157.

Regards,
Jerry

Accident_Unrelated _to_ICV_contamination.

August 25, 2002 Pickup Truck Accident with INEEL Shipment to WIPP Not Related to Contamination Inside TRUPACT #157

TRUPACT 157 was mounted in the center position of the three-position trailer, with the second TRUPACT in the forward position and no payload in the rear position. The pickup truck struck the trailer near the left rear fender area. A horizontal fender member welded to the trailer frame and the left rear-most outer tire absorbed the bulk of the impact (and sustained virtually all of the physical damage to the trailer). The horizontal member also supported a mudflap and carried running lights. Please refer to the accompanying photographs of the accident scene.

With the TRUPACT trailer traveling at ~40 mph and the pickup truck traveling at ~70 mph (accident report values), the relative impact was similar to that of a 30 mph accident (~60 ft/sec and 100 ft/sec respectively). As the pickup truck struck the horizontal member, the mud flap broke free and the horizontal member bent up and forward. As the horizontal member bent away, the outer tire of the rear-most axle was exposed and the pickup truck apparently rode up over that tire. The impact forces at that point were directed up and to the left as the tire rotation spun the pickup truck up and outward. The accident report shows that the initial impact point of the pickup truck back onto the pavement was 24 ft forward of the impact point and ~5 feet to the left of the impact point. The accident report also shows the pickup truck's continued path across the left lane of the eastbound highway and out into the median. While the bed, cab, and frame of the pickup all broke up upon impact, and tumbled to separate locations, the center of mass of these parts came to rest about ~260 ft forward and ~35 ft to the left of the point of impact. The fender and mudflap were knocked off the horizontal member and came to rest about ~110 ft forward and ~35 ft to the right of the point of impact. The left outer rear-most tire of the trailer was damaged and deflated. Subsequent inspections of the condition of the TRUPACT shipping containers indicated no visible contact points with flying debris from the impact.

After inspection and escort to the WIPP site, the two TRUPACT containers were processed according to standard unloading procedures. All processes were normal until the air sample was collected from within the inner containment vessel, and the TRUPACT was re-sealed and shipped back to INEEL for recovery.

During recovery operations, it was determined that the payload assembly had not shifted within the inner containment vessel. This was noted by the fact that the guide tubes inserted through holes in the four plastic slip sheets between the payload containers were clearly not bound and were still loosely in place. If the payload assembly had shifted, even slightly, the guides tubes would bind in their mating depression in the TRUPACT pallet. Even small lateral forces typically cause the guide tubes to resist when removed. In the case of TRUPACT 157, the guide tubes were loose, implying the assembly had not moved from its position when loaded. In addition, careful inspection showed that there were no apparent rubbing or abrasion marks between the payload containers and the inner containment vessel.

In summary, the pickup truck collision with the WIPP shipment did not cause or exacerbate the release of contamination into the inner containment vessel of TRUPACT 157. The inertial differential between 80,000 and 2,500 lb vehicles is enormous. Most of the pickup truck collision energy was split between bending the small horizontal member (holding the trailer fender and mudflap) and the spinning left rear-most tire. There is indirect evidence that the payload had not shifted (even slightly) throughout transit and during the accident impact. This information, along with physical evidence that the retaining ring of one of the payload containers was loose, leads to the conclusion that the contamination inside TRUPACT 157 was unrelated to the pickup truck accident.

Fig 1. Photo showing trailer after accident, with rear TRUPACT position empty


Fig. 2 Photo showing left horizontal fender member bent by Pickup impact

Fig. 3 Photo showing impact marks in the left fender member and damage to tire


Figure 4. Side view of impact area (left rear of trailer)

Fig. 5 Photo indicating no impact from flying accident debris

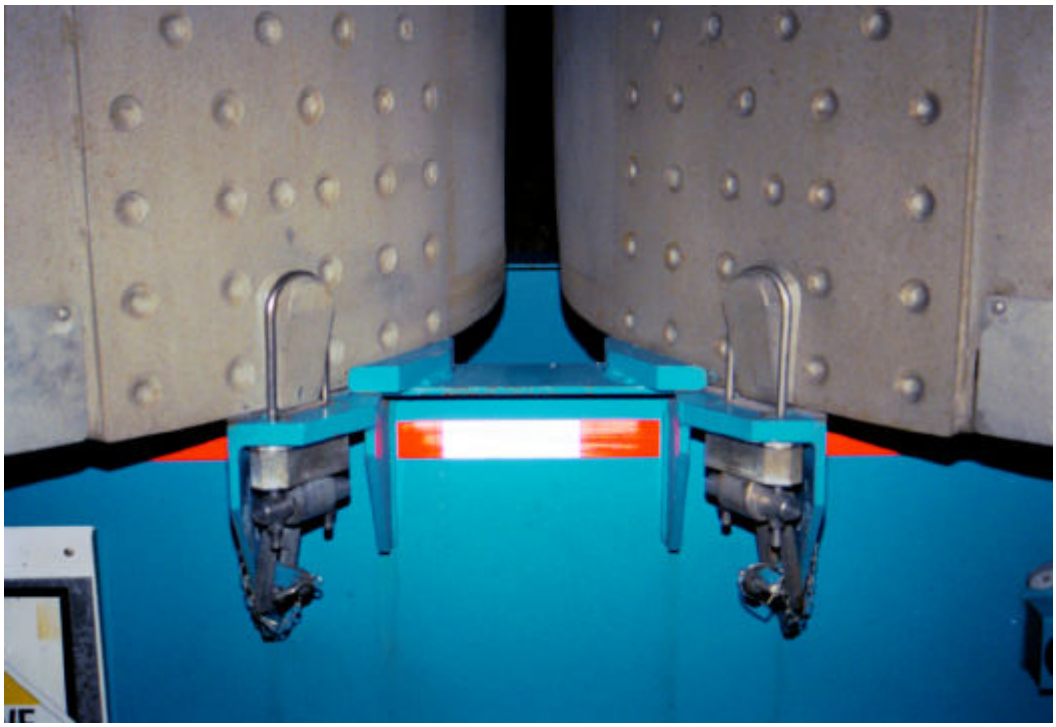


Fig. 6 Photo showing TRUPACT mounting fixtures still intact

Fig. 7 Photo showing fender assembly ~110 ft forward and ~35 ft to the right of the impact point

Fig. 8 Photo showing 1998 Dodge Pickup after the accident – the driver suffered only minor injuries

441.45#
10/10/97
Rev. #03

RADIOLOGICAL SURVEY REPORT

COPY

BARCODE #

BLDG.: HOT SHOP/EXTENSION AREA/ROOM: TRUPACT FLOOR PLAN RWP #: 31002496 02 LOG #: 3 DATE: 1/27/03 TIME: 1140	☐ ROUTINE **JOB DESCRIPTION** ☑ NON ROUTINE (SPECIFY) ☐ FOLLOW UP COMMENTS: ~~General Area Dose Rate measured at waist level~~ 1-31-03 Special contamination survey taken of extended RBA and playpen prior to and after arrival and installation of TRU-PACT (5)

RCT: J.E.../J.E... / ... 1720 PRINT/SIGNATURE REVIEWED BY: [signature]

INSTRUMENTS		
Type	Serial #	Efficiency
ZA	800147	10 %
		%
		%
Scaler	225015	40 %βγ
		24 %α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN ($dpm/100cm^2$) βγ	SWIPE/SCAN ($dpm/100cm^2$) α	LAW (dpm) βγ	LAW (dpm) α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		

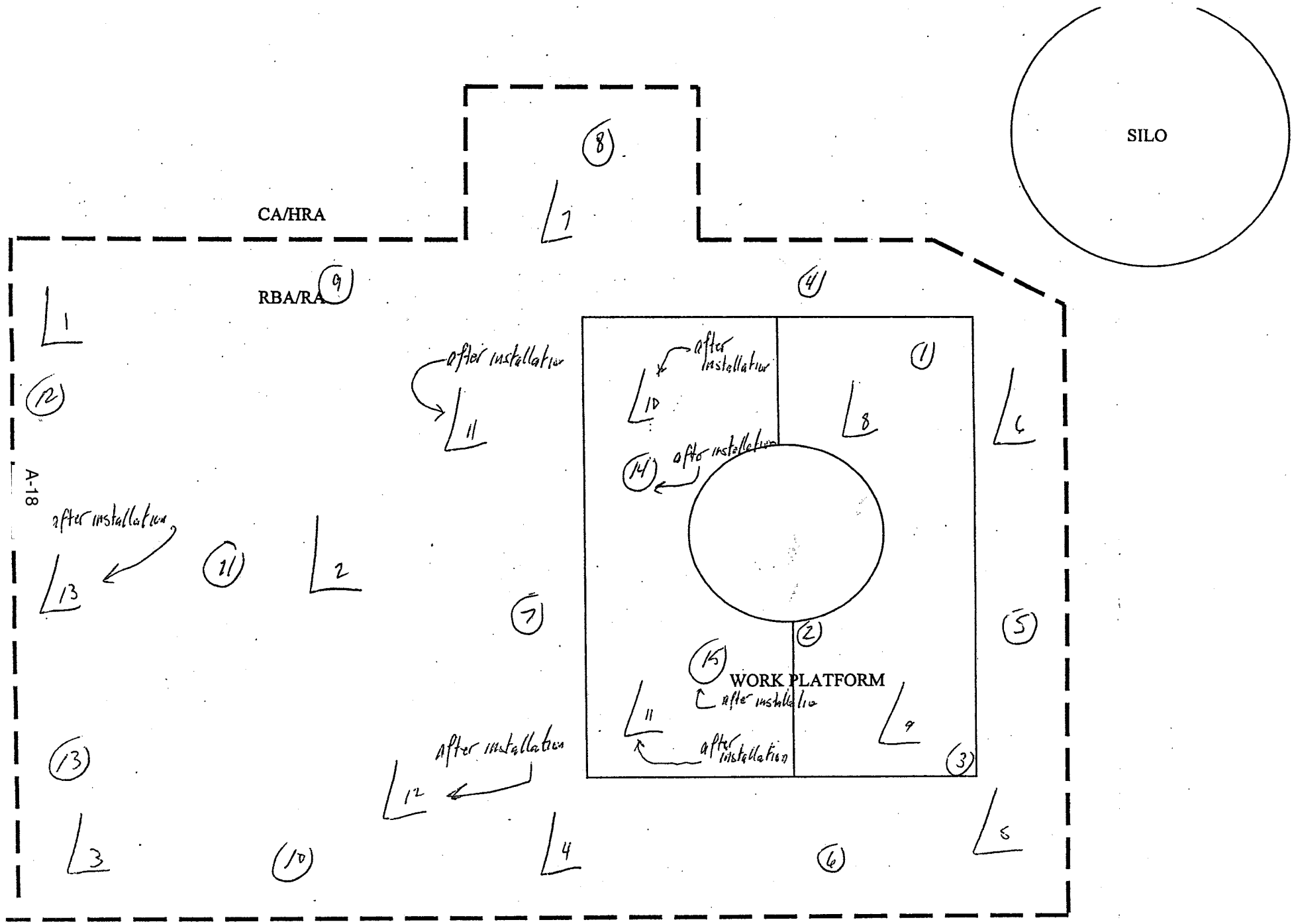
CA Contamination Area
HCA High Contamination Area
RA Radiation Area
HRA High Radiation Area
VHRA Very High Radiation Area
RMA Radioactive Material Area
ARA Airborne Radioactivity Area
RBA Radiological Buffer Area
FCA Fixed Contamination Area

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

\# General Area Dose Rate
\#@#(cm) Dose Rate at Distance From Source
*# ...se Rate
\#β / #γ ...cted / Gamma Dose Rates
α

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
∩ - Tritium Swipe


SILO
CA/HRA
RBA/RA
A-18
WORK PLATFORM
after installation
after installation
after installation
after installation
after installation
after installation
after installation

441.45#
10/10/97
Rev. #03

RADIOLOGICAL SURVEY REPORT

COPY

INSTRUMENTS		
Type	Serial #	Efficiency
		%
		%
		%
Scaler [illegible]	~~113 5400~~ 324920	44.28 %βγ
		29.9 %α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm^2) βγ	SWIPE/SCAN (dpm/100cm^2) α	LAW (dpm) βγ	LAW (dpm) α
*		*	RCM Table 2-2 limits used for this survey.	<1000 / <5000	<20 / NA		
			See Attement Sheet				

CA Contamination Area
HCA High Contamination Area
RA Radiation Area
HRA High Radiation Area
VHRA Very High Radiation Area
RMA Radioactive Material Area
ARA Airborne Radioactivity Area
RBA Radiological Buffer Area
FCA Fixed Contamination Area
SCA Soil Contamination Area
URMA Underground Radioactive Material Area
SOP Step-Off Pad

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

General Area Dose Rate
#@#(cm) Dose Rate at Distance From Source
*# Contact Dose Rate
#β / #γ Beta Corrected / Gamma Dose Rates
α Alpha
β Beta
γ Gamma
n

□ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⌂ - Tritium Swipe

441.45#
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RADIOLOGICAL SURVEY REPORT

BARCODE #

BLDG.: ~~668~~ 664 607
AREA/ROOM: HoT Shop
RWP #: 3100 ~~22~~ 24 96 02
LOG #: 9
DATE: 1-27-03
TIME: 1400

JOB DESCRIPTION

☐ ROUTINE
☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP

COMMENTS: CASK # 157 Lid removal recovery.
Report Batch #'s = 5298, 5297, 5296

Alara TASK # 2900 1689 01 18

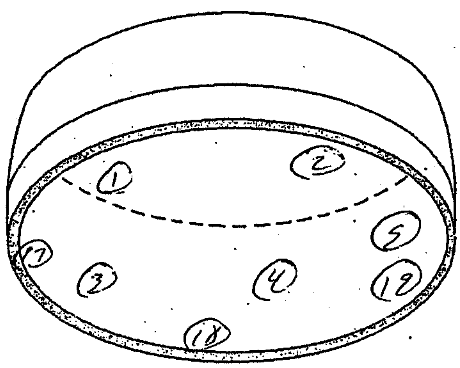
RCT: [illegible] / [signature] PRINT/SIGNATURE

REVIEWED BY: [signature]

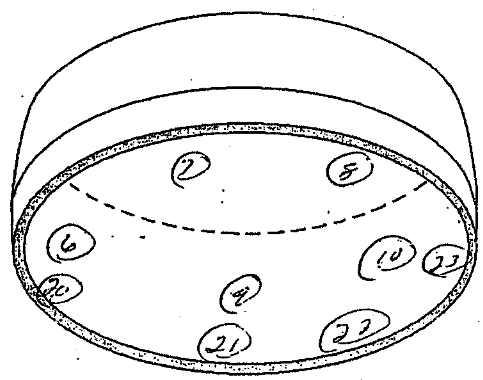
TRUPACT

Cask# 157

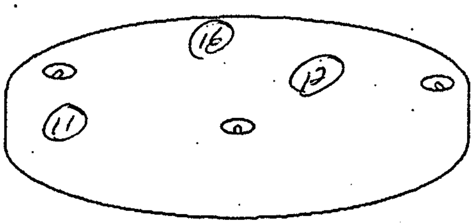
Survey NA-157-2



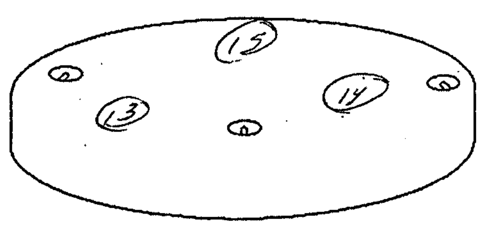
INSIDE OUTER LID RIGHT SIDE



INSIDE OUTER LID LEFT SIDE



INNER LID RIGHT SIDE



INNER LID LEFT SIDE

Tan Smear Report

Batch ID:	smear - 200301271343	**Count Date:**	1/27/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,298	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:			

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.30 ± 0.17		**Alpha:**	29.90 ± 0.23	
Beta Rate:	4.10 ± 0.64		**Beta:**	44.28 ± 0.07	

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030127134312-A2	Unknown	-1.00	0.58	15.37	8.81	6.55	21.89
20030127134442-A1	Unknown	-1.00	0.58	15.37	20.10	8.27	21.89
20030127134552-A3	Unknown	2.34	3.39	15.37	20.10	8.27	21.89
20030127134702-A4	Unknown	-1.00	0.58	15.37	11.07	6.93	21.89
20030127134812-A5	Unknown	-1.00	0.58	15.37	38.17	10.45	21.89
20030127134922-A6	Unknown	-1.00	0.58	15.37	33.65	9.95	21.89
20030127135043-A7	Unknown	-1.00	0.58	15.37	90.11	15.05	21.89
20030127135153-A8	Unknown	-1.00	0.58	15.37	26.87	9.15	21.89
20030127135303-A9	Unknown	-1.00	0.58	15.37	69.78	13.44	21.89
20030127135413-A10	Unknown	-1.00	0.58	15.37	35.91	10.20	21.89
20030127135523-A11	Unknown	5.69	4.77	15.37	20.10	8.27	21.89
20030127135633-A12	Unknown	-1.00	0.58	15.37	26.87	9.15	21.89
20030127135743-A13	Unknown	-1.00	0.58	15.37	31.39	9.69	21.89
20030127135853-A14	Unknown	2.34	3.39	15.37	123.98	17.41	21.89
20030127140013-A15	Unknown	-1.00	0.58	15.37	42.68	10.93	21.89

A-21

Reviewed by: _____

Tan Smear Report

Batch ID:	smear - 200301271326	**Count Date:**	1/27/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,297	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:			

Background (cpm)				Efficiency (%)			
Alpha Rate:	0.30	±	0.17	**Alpha:**	29.90	±	0.23
Beta Rate:	4.10	±	0.64	**Beta:**	44.28	±	0.07

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030127132619-A1 (16)	Unknown	5.69	4.77	15.37	15.58	7.63	21.89
20030127132749-A2 (17)	Unknown	5.69	4.77	15.37	6.55	6.15	21.89
20030127132859-A3 (18)	Unknown	-1.00	0.58	15.37	15.58	7.63	21.89
20030127133009-A4 (19)	Unknown	5.69	4.77	15.37	17.84	7.96	21.89
20030127133119-A5 (20)	Unknown	-1.00	0.58	15.37	26.87	9.15	21.89

A-23

Reviewed by: _____

Tan Smear Report

atch ID:	smear - 200301271238	**Count Date:**	1/27/03
roup:	A	**Count Minutes:**	1.0
evice:	LB5100 #324920	**Count Mode:**	Simultaneous
atch Key:	5,296	**Operating Volts:**	1320
elected Geometry:	1/4" Stainless Steel		
urvey Location:			

Background (cpm)				Efficiency (%)			
Alpha Rate:	0.30	±	0.17	**Alpha:**	29.90	±	0.23
Beta Rate:	4.10	±	0.64	**Beta:**	44.28	±	0.07

ıple ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
A-25 4-31-03							
'123858-A1 (21)	Unknown	5.69	4.77	15.37	20.10	8.27	21.89
'124028-A2 (22)	Unknown	2.34	3.39	15.37	6.55	6.15	21.89
30127124138-A3 (23)	Unknown	-1.00	0.58	15.37	15.58	7.63	21.89

eviewed by: _____

441.45#
10/10/97
Rev. #03

RADIOLOGICAL SURVEY REPORT

COPY

BARCODE #

BLDG.: HOT SHOP/EXTENSION
AREA/ROOM: TRUPACT FLOOR PLAN
RWP #: 2100296 03
LOG #: 5
DATE: 1/27/03
TIME: 1500

☐ ROUTINE **JOB DESCRIPTION**
☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP

COMMENTS: ~~General Area Dose Rate measured at waist level~~ CCF 1-31-03
Tru-Pact 157 - After Containment Sleeve was accordioned on. Last step in. This RWP Coverage.

RCT: F. Bush / F Bush PRINT/SIGNATURE

REVIEWED BY: [signature]

INSTRUMENTS		
Type	Serial #	Efficiency
L-177	801973	10 %
L-177	802224	10 %
		%
Scaler		%βγ
		%α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		

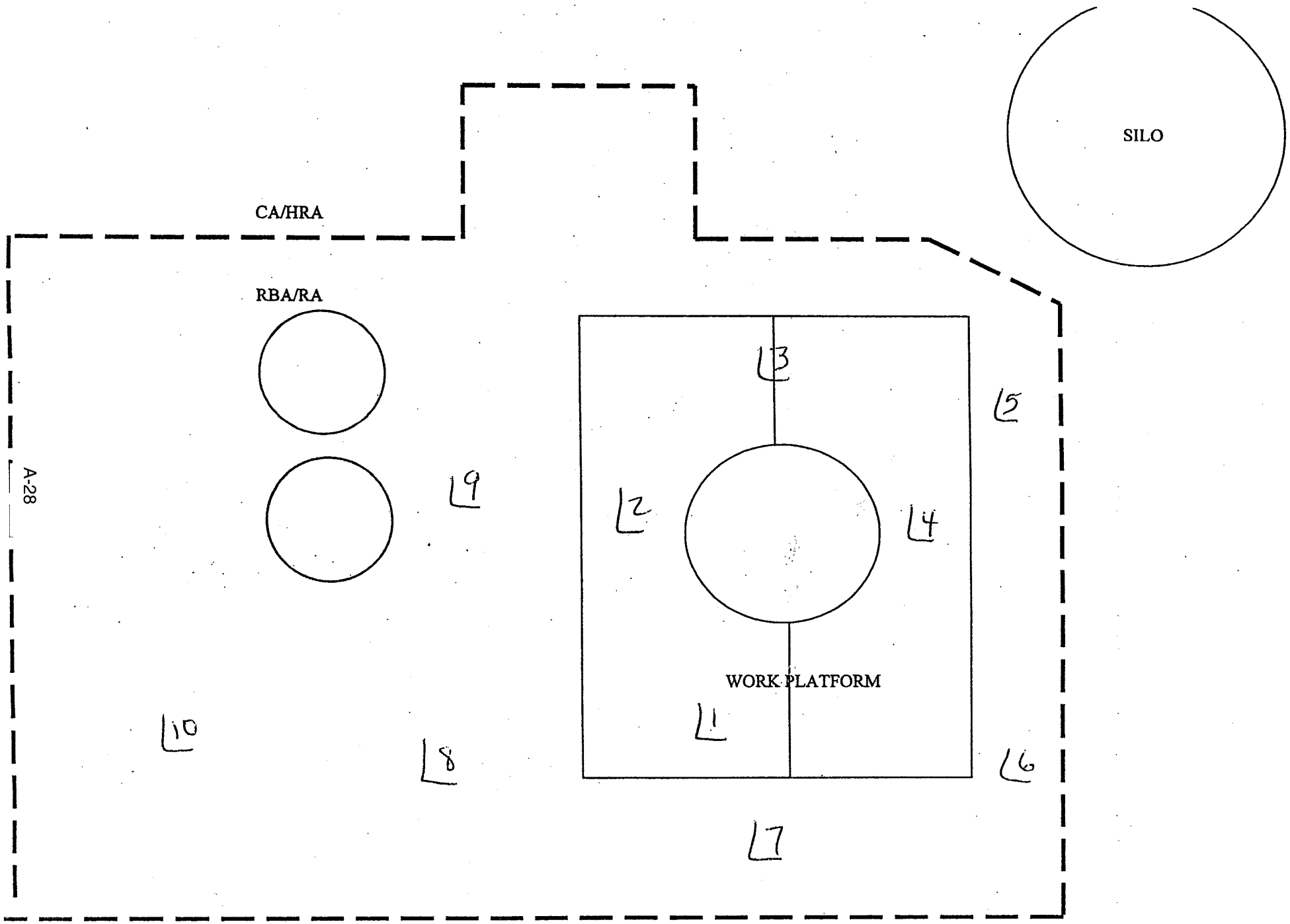
CA Contamination Area
HCA High Contamination Area
RA Radiation Area
HRA High Radiation Area
VHRA Very High Radiation Area
RMA Radioactive Material Area
ARA Airborne Radioactivity Area
RBA Radiological Buffer Area
FCA Fixed Contamination Area

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

General Area Dose Rate
#@#(cm) Dose Rate at Distance From Source
*# se Rate
#β / #γ A-27 ted / Gamma Dose Rates
α Alpha

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
∩ - Tritium Swipe


SILO
CA/HRA
RBA/RA
A-28
WORK PLATFORM

441.45#
10/10/97
Rev. #03

RADIOLOGICAL SURVEY REPORT

COPY

BARCODE #

BLDG.: HOT SHOP/EXTENSION
AREA/ROOM: TRUPACT FLOOR PLAN
RWP #: 31002496 02
LOG #: 5
DATE: 1/27/03
TIME: 1500

☐ ROUTINE **JOB DESCRIPTION**
☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP

COMMENTS: ~~General Area Dose Rate measured at waist level~~
RBA Masslin wipe down follow CCU Lid removal TO Lid Stand.

RCT: F. Bush / F Bush
PRINT/SIGNATURE

REVIEWED BY: [signature]

INSTRUMENTS		
Type	Serial #	Efficiency
177-L	801973	10 %
177-L	802224	10 %
		%
Scaler		%βγ
		%α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²) βγ	SWIPE/SCAN (dpm/100cm²) α	LAW (dpm) βγ	LAW (dpm) α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		

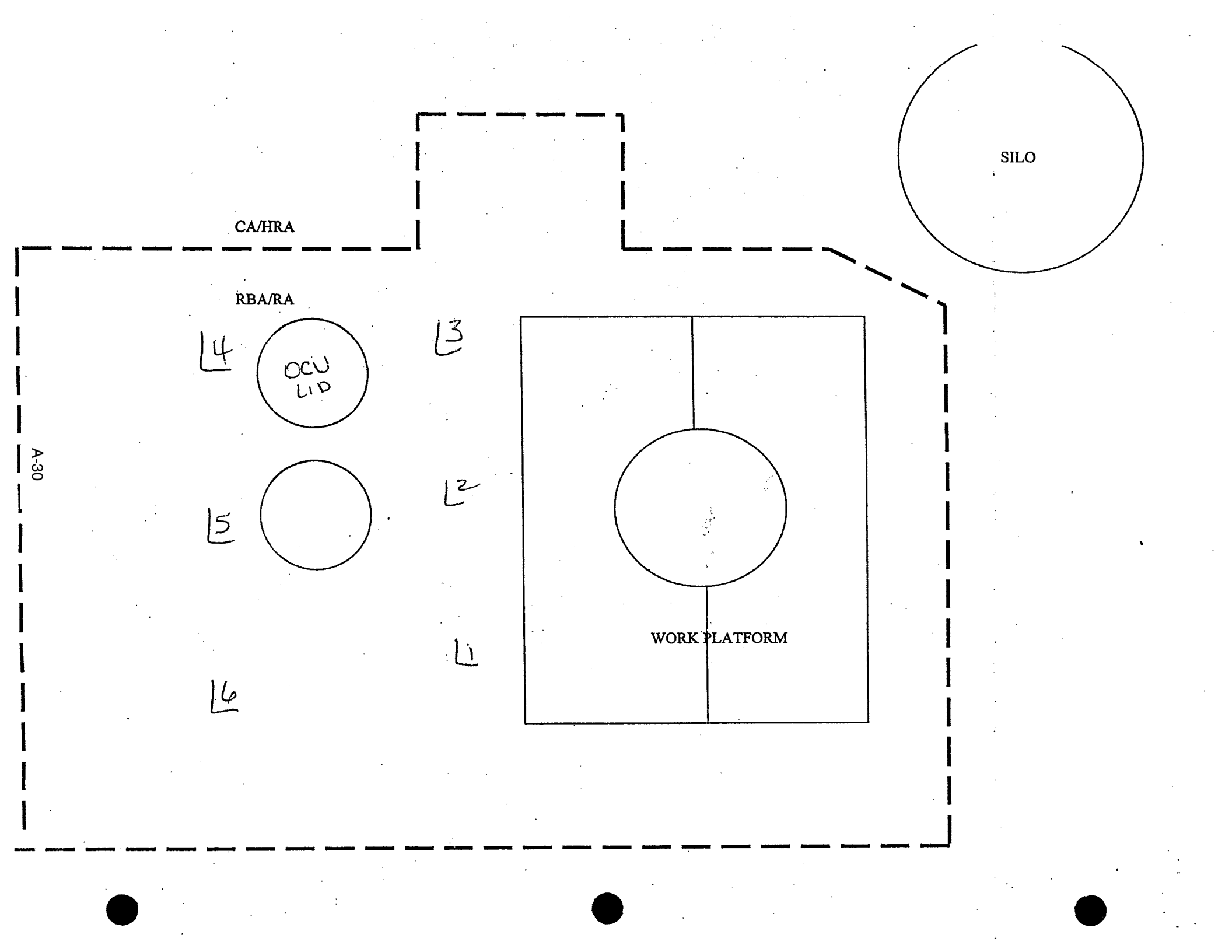
CA Contamination Area
HCA High Contamination Area
RA Radiation Area
HRA High Radiation Area
VHRA Very High Radiation Area
RMA Radioactive Material Area
ARA Airborne Radioactivity Area
RBA Radiological Buffer Area
FCA Fixed Contamination Area

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

\# General Area Dose Rate
#@#(cm) Dose Rate at Distance From Source
*# Contact Dose Rate
#β / #γ ...cted / Gamma Dose Rates
α

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⌂ - Tritium Swipe


SILO
CA/HRA
RBA/RA
L4
OCU
LID
L3
A-30
L5
L2
L1
L6
WORK PLATFORM

441.45#
10/10/97
Rev. #03

RADIOLOGICAL SURVEY REPORT

COPY

BARCODE #

BLDG.: HOT SHOP/EXTENSION	☐ ROUTINE **JOB DESCRIPTION**
AREA/ROOM: TRUPACT FLOOR PLAN	☑ NON ROUTINE (SPECIFY) ☐ FOLLOW UP
RWP #: 3100249602	
LOG #: 9	COMMENTS: ~~General Area Dose Rate measured at waist level~~ 1-31-03 Special contamination surveys taken of area during and after removal of TRUPACT 157 OCV lid, ICV lid removal and payload inspections.
DATE: 1/28/03	
TIME: 1745	

RCT: J. Ely / J. Ely L. McKinley / L. McKinley, J. Bird / J. Bird (PRINT/SIGNATURE) REVIEWED BY: [signature]

INSTRUMENTS		
Type	Serial #	Efficiency
2A	800147	10 %
		%
		%
Scaler	225015	40 %βγ
		24 %α
electra	801534	10 %

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN ($dpm/100cm^2$)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		

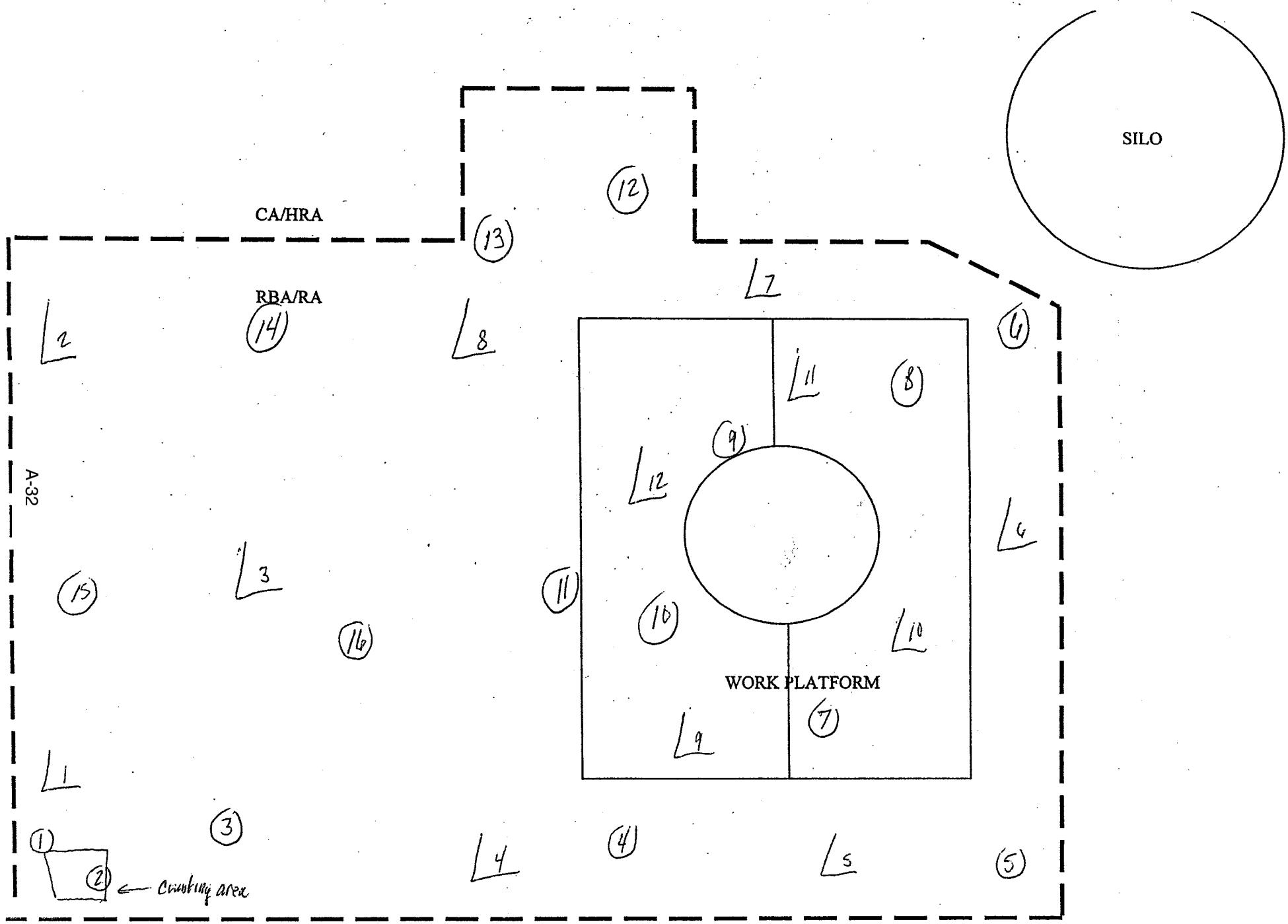
CA Contamination Area
HCA High Contamination Area
RA Radiation Area
HRA High Radiation Area
VHRA Very High Radiation Area
RMA Radioactive Material Area
ARA Airborne Radioactivity Area
RBA Radiological Buffer Area
FCA Fixed Contamination Area

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

\# General Area Dose Rate
#@#(cm) Dose Rate at Distance From Source
*# ...se Rate
#β / #γ ...ted / Gamma Dose Rates
α ...

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
∩ - Tritium Swipe


SILO
CA/HRA
RBA/RA
A-32
WORK PLATFORM
Crushing area

441.45#
10/10/97
Rev. #03

RADIOLOGICAL SURVEY REPORT

COPY

INSTRUMENTS		
Type	Serial #	Efficiency
		%
		%
	324220	%
Scaler	~~HB 5160~~	44.28 %βγ
	GM-30-03	29.9 %α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	2 1000 / 2 5000	220 / N/A		
			See Attachment Sheet.				

CA	Contamination Area	-x—x-	Radiological Barrier	□ -	Direct Scan
HCA	High Contamination Area				
RA	Radiation Area	ALL dose rates are in mrem/hr, unless otherwise noted.		○ -	Swipe (Smear)
HRA	High Radiation Area				
VHRA	Very High Radiation Area	#	General Area Dose Rate	L -	Large Area Wipe (LAW)
RMA	Radioactive Material Area	#@#(cm)	Dose Rate at Distance From Source		
ARA	Airborne Radioactivity Area	*#	Contact Dose Rate	△ -	Air Sample
RBA	Radiological Buffer Area	#β / #γ	Beta Corrected / Gamma Dose Rates		
FCA	Fixed Contamination Area	α	Alpha	⌂ -	Tritium Swipe
SCA	Soil Contamination Area	β	Beta		
URMA	Underground Radioactive Material Area	γ	Gamma		
SOP	Step-Off Pad	n	Neutron		

441.45#
10/10/97
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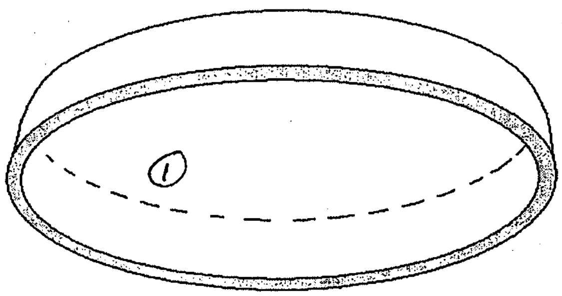
RADIOLOGICAL SURVEY REPORT

BARCODE #

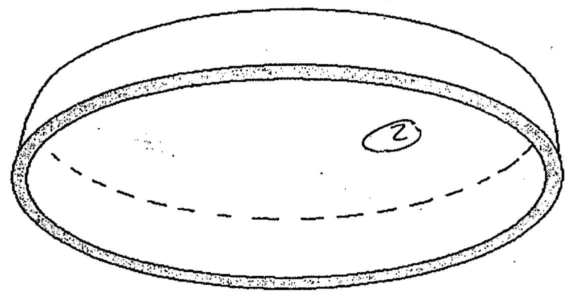
BLDG.: ~~668~~ 607	☐ ROUTINE **JOB DESCRIPTION**
AREA/ROOM: HotShop	☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP
RWP #: 31002496 02	COMMENTS: CASK #157 recovery
LOG #: 9	Smears 7-9 used on viewing Camera
DATE: 1-27-03	Report Batch #'s: 5306, 5301, 5299
TIME: 1830	Alara Task # 2902 1689 01 17

RCT: L. Bird / L McKinley REVIEWED BY: [signature]
PRINT/SIGNATURE

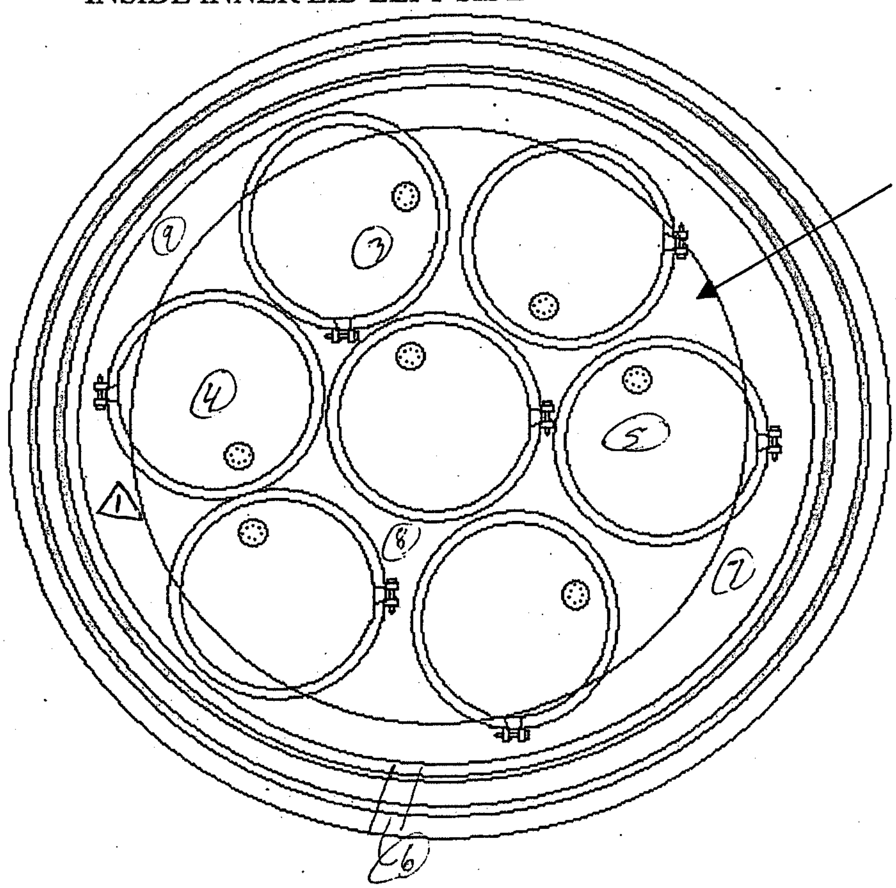
TRUPACT **CASK #** 157 **SURVEY #** NA -157-



INSIDE INNER LID LEFT SIDE



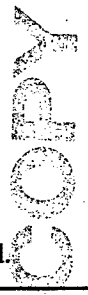
INSIDE INNER LID RIGHT SIDE



TOP OF PAYLOAD INSIDE CASK

Tan Smear Report

Batch ID:	smear - 200301271720	**Count Date:**	1/27/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,299	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	ICV inner lid/underside/ and top of Payload.		



Background (cpm)				Efficiency (%)			
Alpha Rate:	0.30	±	0.17	**Alpha:**	29.90	±	0.23
Beta Rate:	4.10	±	0.64	**Beta:**	44.28	±	0.07

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030127172009-A1	Unknown	2.34	3.39	15.37	22.36	8.57	21.89
20030127172139-A2	Unknown	-1.00	0.58	15.37	4.29	5.72	21.89
20030127172250-A3	Unknown	-1.00	0.58	15.37	17.84	7.96	21.89
20030127172400-A4	Unknown	5.69	4.77	15.37	13.32	7.29	21.89
20030127172510-A5	Unknown	-1.00	0.58	15.37	13.32	7.29	21.89

Reviewed by: _____

Tan Smear Report

Batch ID:	smear - 200301271736	**Count Date:**	1/27/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,301	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	Q-Tip inside port hole.		

	Background (cpm)			Efficiency (%)	
Alpha Rate:	0.30 ± 0.17		**Alpha:**	29.90 ± 0.23	
Beta Rate:	4.10 ± 0.64		**Beta:**	44.28 ± 0.07	

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030127173603-A16	Unknown	-1.00	0.58	15.37	20.10	8.27	21.89

Reviewed by: ____________________

Tan Smear Report

Batch ID:	smear - 200301271808	**Count Date:**	1/27/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,306	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	Smears taken on viewing camera probe.		

Background (cpm)				Efficiency (%)			
Alpha Rate:	0.30	±	0.17	**Alpha:**	29.90	±	0.23
Beta Rate:	4.10	±	0.64	**Beta:**	44.28	±	0.07

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030127180850-A7	Unknown	5.69	4.77	15.37	11.07	6.93	21.89
20030127181020-A8	Unknown	2.34	3.39	15.37	17.84	7.96	21.89
20030127181130-A9	Unknown	2.34	3.39	15.37	17.84	7.96	21.89

A-39

Reviewed by: _____

441.48
07/30/2001
Rev. 03

AIRBORNE SURVEY RESULTS

COPY

Use this form in conjunction with MCP-7, MCP-356, MCP-357, TPR-6430, and TPR-6431.

Initial Count

Facility: TAN Building: 607 Room/Area: Hot Shop

RWP No.: 31002496 02 ALARA Task No.: 29001689 01 18

Job Description: TRUPACT-157 Repackage

Date/Time Taken: 1-27-03 16:23 TO 1648* Sampler ID: 0785 Sampler Type: STAPLEX

Total Time (min): 15 (power outage) X Flow Rate (cfm/lpm): 9.8 = Total Vol. (ft³/liters): 147

Comments: 1440 dpm βγ / 865 dpm α = 1.66 FCF using .85% filter eff.
*(10 min power outage during sampling)

Counter Type: NMC Counter ID No.: 237709 % Eff. β/γ: 31

Count Time (min): 1 Date and Time Counted: 1/27/03 1700 % Eff. α: 28

Gross CPM β/γ: 482 – Bkgd. CPM β/γ: 35.7 = Net CPM β/γ: 446.3

Gross CPM α: 206 – Bkgd. CPM α: .1 = Net CPM α: 205.9

Activity, μCi/cc β/γ: $1.83E^{-10}$ ÷ Applicable DAC β/γ: $2E^{-9}$ = DAC Fraction β/γ: .092

Activity, μCi/cc α: $9.37E^{-11}$ ÷ Applicable DAC α: $2E^{-12}$ = DAC Fraction α: 46.86

Respirator Protection Factor: 1 Total DAC Fraction: 46.95

Effective DAC Fraction: 46.95

RadCon: F. Bush (Print Name) F. Bush (Signature)

Delayed Count

Counter Type: NMC Counter ID No.: 237709 % Eff. β/γ: 31

Count Time (min): 1 Date and Time Counted: 1-27-03 / 1235 % Eff. α: 28

Gross CPM β/γ: 254 – Bkgd. CPM β/γ: 35.7 = Net CPM β/γ: 218.3

Gross CPM α: 122 – Bkgd. CPM α: .1 = Net CPM α: 121.9

Activity, μCi/cc β/γ: $8.97E^{-11}$ ÷ Applicable DAC β/γ: $2E^{-9}$ = DAC Fraction β/γ: .045

Activity, μCi/cc α: $5.55E^{-11}$ ÷ Applicable DAC α: $2E^{12}$ = DAC Fraction α: 27.741

Respirator Protection Factor: 1 Total DAC Fraction: 27.78

Effective DAC Fraction: 27.78

RadCon: F. Bush (Print Name) F. Bush (Signature)

Evaluation

Effective DAC Fraction = Total DAC Fraction ÷ Respirator Protection Factor

If Effective DAC Fraction < 0.3 then DAC-hour tracking is not required.

If Effective DAC Fraction ≥ 0.3 then DAC-hour tracking is required.

Review

RadCon Foreman/Supervisor: G. L. Lusk (Print Name)

[signature] (Signature) Date: ~~1-28~~ 01-28-03

441.48
07/30/2001
Rev. 03

AIRBORNE SURVEY RESULTS

COPY

Delayed Count

Counter Type: NMC | Counter ID No.: 237709 | % Eff. β/γ: 31
Count Time (min): 1 | Date and Time Counted: 1-27-03 / 1835 | % Eff. α: 28
Gross CPM β/γ: 122 – Bkgd. CPM β/γ: 35.7 = Net CPM β/γ: 86.3
Gross CPM α: 40 – Bkgd. CPM α: .1 = Net CPM α: 39.9
Activity, µCi/cc β/γ: 3.55 E-11 ÷ Applicable DAC β/γ: 2E-9 = DAC Fraction β/γ: .018
Activity, µCi/cc α: 1.82E-11 ÷ Applicable DAC α: 2E-12 = DAC Fraction α: 9.08
Respirator Protection Factor: 1 $\alpha\ T_{1/2} = \frac{.693(30)}{\ln \frac{1626}{865.1}}$ ≈ 38 min $\beta\gamma: \frac{.693(30)}{\ln \frac{238}{144.0}}$ ≈ 38 min Total DAC Fraction: 9.07
Effective DAC Fraction: 9.07

RadCon: F. Bush (Print Name) J Bush (Signature)

Delayed Count

Counter Type: | Counter ID No.: | % Eff. β/γ:
Count Time (min): | Date and Time Counted: | % Eff. α:
Gross CPM β/γ: – Bkgd. CPM β/γ: = Net CPM β/γ:
Gross CPM α: – Bkgd. CPM α: = Net CPM α:
Activity, µCi/cc β/γ: ÷ Applicable DAC β/γ: = DAC Fraction β/γ:
Activity, µCi/cc α: ÷ Applicable DAC α: = DAC Fraction α:
Respirator Protection Factor: Total DAC Fraction:
Effective DAC Fraction:

RadCon: (Print Name) (Signature)

Delayed Count

Counter Type: | Counter ID No.: | % Eff. β/γ:
Count Time (min): | Date and Time Counted: | % Eff. α:
Gross CPM β/γ: – Bkgd. CPM β/γ: = Net CPM β/γ:
Gross CPM α: – Bkgd. CPM α: = Net CPM α:
Activity, µCi/cc β/γ: ÷ Applicable DAC β/γ: = DAC Fraction β/γ:
Activity, µCi/cc α: ÷ Applicable DAC α: = DAC Fraction α:
Respirator Protection Factor: Total DAC Fraction:
Effective DAC Fraction:

RadCon: (Print Name) (Signature)

Review

RadCon Foreman/Supervisor: G. L. Lusk (Print Name)
(Signature) Date: 1-28-03

TAN Hi-Vol Report Delayed Count No Respirator

Batch ID:	Delayed Count Grab Sample NO RESP - 200301280824	**Count Date:**	1/28/03
Group:	A	**Count Minutes:**	10.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,309	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		

COPY

Hi-Vol Data on/off time Trupact 157 Hi-vol, 1/27/03 1623 to 1648 (with 10 min. power outage) 15 min. total run time D-785 Staplex sampler, 9.8 cfm.

RWP/AT # 31002496 02 29001689 01 18 J. Johnston

	Background (cpm)		Efficiency (%)	
Alpha Rate:	0.10 ± 0.10	**Alpha:**	29.90 ± 0.23	
Beta Rate:	4.30 ± 0.66	**Beta:**	44.28 ± 0.07	

Hi-Vol ID/ Location	Alpha (uCi/ml)	Unc	Alpha MDA (uCi/ml)	Beta (uCi/ml)	Unc	Beta MDA (uCi/ml)
Inside Containment after intial opening	2.98E-013	1.09E-013	2.66E-013	1.76E-012	3.07E-013	8.11E-013

A-45

Alpha (cpm): 0.80 **Beta (cpm):** 11.50

DAC Alpha: 0.1500 **DAC Beta:** 0.0000 **Total DAC:** 0.1500

Applicable DAC α = 2.0E-12 uCi/ml , Applicable DAC Bγ = 2.0E-9 uCi/ml **Total Effective DAC:** 0.1500

Volume 4,163,040.00 **Units** ml

Reviewed by:

242.11
/23/2001
. 02

FACSIMILE COVER SHEET

Idaho National Engineering and Environmental Laboratory

INEEL
Home of Science and Engineering Solutions

FACSIMILE SHEET

DATE: 2-19-03

TO: K. Archibald

Organization/Location:

Phone Number:

FAX Number: 6-4236

FROM: G. Lusk

Organization/Location:

Phone Number: 4165

FAX Number: 526-6648

COMMENTS:

This transmittal consists of [1] pages *EXCLUDING* cover sheet.

NOTICE OF CONFIDENTIALITY

This facsimile may contain PRIVILEGED or COMPANY PRIVATE information that is intended solely for the use of the specific individual or entity named above as the addressee and may not otherwise be disclosed, copied, distributed or disseminated. If you are not the intended recipient or have received this transmission in error please destroy your copy and notify the sender immediately by telephone.

PLEASE REMOVE ANY STAPLES

TAN Hi-Vol Report Delayed Count Respirator

atch ID:	Delayed Count Grab Sample NO RESP - 200302030819	Count Date:	2/3/03
roup:	A	Count Minutes:	10.0
evice:	LB5100 #324920	Count Mode:	Simultaneous
atch Key:	5,372	Operating Volts:	1320
elected Geometry:	1/4" Stainless Steel		

i-Vol Data on/off time HI-VOL TAKEN INSIDE CONTAINMENT OF TRUPACT 157 ON INTIAL OPENING, 1-27-03 1623 TO 1648 (10 MIN. POWER OUTAGE) 15 MIN.
WP/AT # RUN TIME D-785 STAPLEX, 9.8 CFM

3100245602 29001685 01 18

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.10	± 0.10	Alpha:	29.90	± 0.23
Beta Rate:	5.40	± 0.73	Beta:	44.28	± 0.07

ID/ Location	Alpha (uCi/ml)	Unc	Alpha MDA (uCi/ml)	Beta (uCi/ml)	Unc	Beta MDA (uCi/ml)
PACT 157 HI-VOL	1.28E-013	8.09E-014	2.66E-013	8.80E-013	2.93E-013	9.01E-013

lpha (cpm): 0.40 Beta (cpm): 9.00

AC Alpha: 0.0600 DAC Beta: 0.0000 Total DAC: 0.0600

pplicable DAC α = 2.0E-12 uCi/ml , Applicable DAC Bγ = 2.0E-9 uCi/ml Total Effective DAC: 0.0600

olume 4,163,040.00 Units ml

Reviewed by:

C:\Program Files\Tennelec Systems\Eclipse\Delayed Cnt Grab sample no resp.rpt

Print Date 2/14/03
Print Time 1:21:29PM

Idaho National Engineering & Environmental Laboratory

INTERDEPARTMENTAL COMMUNICATION
Direct Read Monitoring Results

Date: 04/15/2003

To: DOUGLAS WALE MS: 9206 526-1102

From: TOBIN MOTT MS: 5222 526-3688

Subject: TRUPACT REPACKAGING

Location: INEL TAN 607

Assessment: 3429.00
Work Process: OPERATIONS
Category: WASTE PROCESSING
Task: WASTE REPACKAGING

Industrial Hygiene performed area sampling, per MCP-153, relating to the repackaging of TRUPACT-157 at TAN-607. Sampling is necessary to (1) determine workplace hazard levels, (2) determine appropriate control measures, and (3) ensure compliance with applicable procedures and standards.

The sample results are specific to the following:

THIS ACTIVITY WAS PERFORMED PER THE FOLLOWING DOCUMENTS:

TPR-6230 & TPR-6233 WITH CORRESPONDING JSA'S WERE USED. THIS PROCESS WAS IDEALLY A ONE-TIME ACTIVITY.

THIS ACTIVITY INVOLVED THE REPACKAGING OF DRUMS FROM A TRUPACT CONTAINER TO STANDARD METAL WASTE BOXES. THE DRUMS CONTAINED MIXED LOW LEVEL WASTE MLLW). THE WASTE WAS KNOWN TO CONTAIN VOLATILE ORGANIC CHEMICALS (VOC'S). CONTAINMENT AND VENTILATION WERE USED AS THE DRUMS WERE TRANSFERRED FROM THE TRUPACT CONTAINER TO THE STANDARD WASTE BOXES.

A RAE SYSTEMS "MINIRAE" PHOTOIONIZATION DETECTOR (PID) WAS USED TO OBTAIN REAL TIME VOC MEASUREMENTS. IT WAS ALSO USED AS A PUMP TO FILL TEDLAR BAGS. THE TEDLAR BAGS WERE THEN QUALITATIVELY MEASURED USING A BRUELL& KJAR (B&K) PHOTOACOUSTIC ANALYZER. HOWEVER, THE B&K ANALYZER WOULD NOT PROPERLY RESPOND DURING TO BUMP TESTING SO THE DATA WAS NOT VALIDATED. THE B&K DATA WAS SUPPLEMENTARY INFORMATION THEREFORE THE FAILED BUMP TEST WAS NOT CRITICAL IN DETERMINING EXPOSURE LEVELS. THE PID WAS THE PRIMARY INSTRUMENT FOR AREA MONITORING. IN ADDITION, THE HEADSPACE OF THE DRUMS HAD BEEN SAMPLED PRIOR TO THE REPACKAGING SO THE B&K DATA WAS NOT ESSENTIAL TO ACQUIRE QUALITATIVE INFORMATION. THE PURPOSE OF THE AREA SAMPLING WAS TO ENSURE NO ELEVATED VOC LEVELS WERE PRESENT. AREA SAMPLES WERE MAINLY COLLECTED IN THE HEADSPACE AREA WHILE THE TRUPACT CONTAINER WAS BEING DISASSEMBLED INSIDE CONTAINMENT PER TPR-6230. AREA SAMPLING WAS ALSO PERFORMED IN THE GENERAL AREA AROUND THE TENT THAT THE PAYLOAD OF THE TRUPACT CONTAINER WAS DISASSEMBLED IN PRIOR TO DRUM REPACKAGING INTO STANDARD METAL WASTE BOXES. AREA SAMPLING WAS PERFORMED ON THE OUTSIDE OF THE TENT TO BE MORE REPRESENTATIVE OF WORKER EXPOSURE. ALL FORMS OF CONTAINMENT WERE EXHAUSTED THROUGH HEPA-FILTERED AIR MOVERS AT A DISTANCE OF APPROXIMATELY 20 FEET FROM ROUTINELY OCCUPIED SPOTS. SMALL PEAK LEVELS OF VOC'S WERE RECORDED BUT DISSIPATED OVER TIME.

HEAT STRESS MEASUREMENTS WERE TAKEN ON THE FIRST DAY AND STAY TIMES WERE NOT DEEMED NECESSARY.

Recommended Controls:

Based on this assessment, the following controls were recommended for safe operation.

Engineering Controls:

GENERAL DILUTION VENTILATION
HEPA FILTERED EXHAUST
NEGATIVE PRESSURE FULL ENCLOSURE
PARTIAL ENCLOSURE

Administrative Controls:

BARRICADES/PHYSICAL BARRIERS
PREJOB BRIEFING
DESIGNATED EATING AREA
HAND WASHING FACILITIES
HEAT STRESS MONITORING
POLICIES
AWARE OF BODY POSITION
PROCEDURES
SIGNS
TRAINING

Follow Up Actions:
The actions noted below have been determined per MCP-153, Appendices A,B,C,E and F. They are necessary to ensure continued safe operations.

NO UPDATE REQUIRED

The sample results were:

Sample: 1
Agent: HEAT STRESS

Sample Type: DIRECT READ
Sample Comments: HEAT STRESS MEASUREMENT. DETERMINED STAY TIMES UNNECESSARY BASED ON DRY BULB TEMPERATURES REMAINING STEADY.

Seq#	Sample Date	Sample Time	Location	Measured Value/ Exposure Limit	UOM
1	01/27/2003	13:15	TAN-607 HOT SHOP AND TRUCK EXTENSION	56	WIBGET

Sample: 2
Agent: ORGANIC VAPORS

Sample Type: DIRECT READ
Sample Comments: THE MINIRAE PID WAS USED FOR ALL DATA COLLECTION TO ESTIMATE VOC CONCENTRATIONS & ENSURES VOC LEVELS WERE NOT ELEVATED IN VARIOUS LOCATIONS.

Seq#	Sample Date	Sample Time	Location	Measured Value/ Exposure Limit	UOM
1	01/27/2003	13:15	INSIDE CONTAINMENT AROUND TRUPACT BETWEEN OCV AND ICV. OCV LID WAS OFF.	0.0	PPM
				5.0	PPM
2	01/27/2003	16:15	INSIDE CONTAINMENT. ICV LID WAS OFF & EXPOSED TO PAYLOAD. EMPLOYEES WEREN'T INSIDE SAMPLE SPACE.	0.3	PPM
				5.0	PPM

The sample results were:

Sample: 3
Agent: ORGANIC VAPORS

Sample Type: DIRECT READ
Sample Comments: THE MINIRAE PID WAS USED FOR ALL DATA COLLECTION TO ESTIMATE VOC CONCENTRATIONS & ENSURES VOC LEVELS WERE NOT ELEVATED IN VARIOUS LOCATIONS.

Seq#	Sample Date	Sample Time	Location	Measured Value/ Exposure Limit	UOM
1	01/28/2003	10:10	INSIDE CONTAINMENT. ICV LID WAS OFF & EXPOSED TO PAYLOAD.	0.3	PPM
				5.0	PPM
2	01/28/2003	13:30	GENERAL AREA OUTSIDE TENT	0.2	PPM
				5.0	PPM

The sample results were:

Sample: 4
Agent: ORGANIC VAPORS
Result Standard:
Result Time:
Sample Type: DIRECT READ
Sample Comments: THE MINIRAE PID WAS USED FOR ALL DATA COLLECTION TO ESTIMATE VOC CONCENTRATIONS & ENSURES VOC LEVELS WERE NOT ELEVATED IN VARIOUS LOCATIONS.

Seq#	Sample Date	Sample Time	Location	Measured Value/ Exposure Limit	UOM
1	01/29/2003	14:16	GENERAL AREA OUTSIDE TENT	2	PPM
				5	PPM

These sample results are measures of hazardous agent levels present in workplace areas or materials. In some cases, these results can be used to estimate or predict employee exposures. However, they do not represent actual employee exposure levels. Employee exposures can only be determined via personal monitoring. The exposure limits (for airborne chemical hazards or physical

agents), that designate safe levels of employee exposure, are noted for comparison only.

Recommendations:

The purpose of the area sampling was to ensure no elevated VOC levels were present. Area samples were mainly collected in the headspace area, which did not present an exposure potential. Area monitoring was performed to verify controls. The controls were adequate to protect personnel. Please continue to adhere to control measures noted in the exposure assessment.

Please contact me if you have any questions.

cc: JAN BILLS MS:3125
TOBIN MOTT MS:5222

Uniform File Code: 5154
Disposition Authority: A1-21.2-d-2
Retention Schedule: Cut off when the facility is dismantled. Destroy 75 years after cut off. (EPI)

441.45#
10/10/97
Rev. #03

RADIOLOGICAL SURVEY REPORT

COPY

BARCODE #

BLDG.: 607
AREA/ROOM: Hot Shop
RWP #: 3100 2496 02
LOG #: 9
DATE: 1-27-03
TIME: 1830

☐ ROUTINE **JOB DESCRIPTION**
☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP
COMMENTS: ~~General Area Dose Rate measured at waist level~~ 1-27-03
CASK #157 recovery
Report Batch #'s = 5302, 5304, 5305, 5308
Alara TASK # 29 00 1689 0118

RCT: [illegible] / [illegible] PRINT/SIGNATURE

REVIEWED BY: [signature]

INSTRUMENTS		
Type	Serial #	Efficiency
		%
		%
		%
Scaler	324920	44.28 %βγ
		26.9 %α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		
			See 213500 printout sheets.				

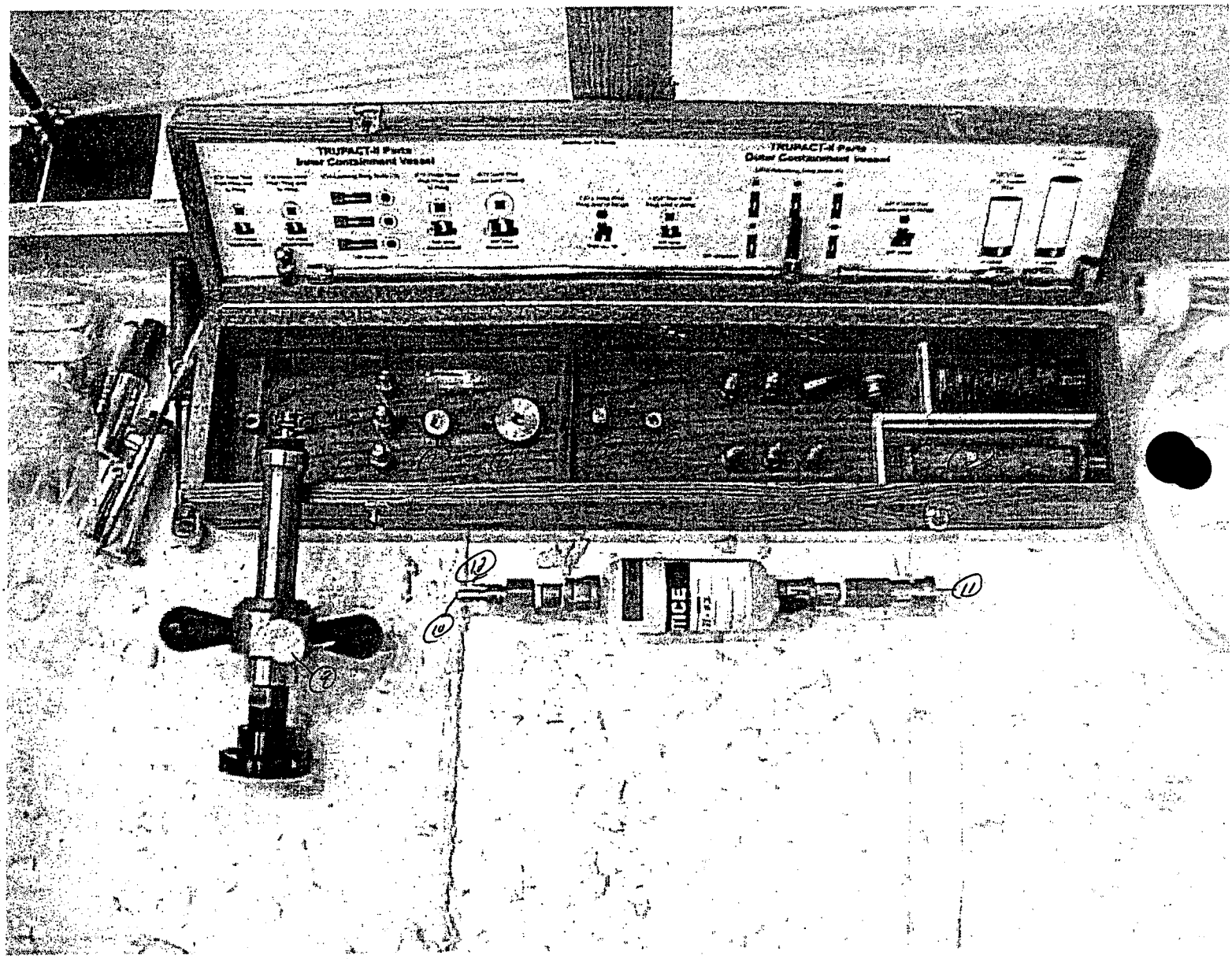
CA Contamination Area
HCA High Contamination Area
RA Radiation Area
HRA High Radiation Area
VHRA Very High Radiation Area
RMA Radioactive Material Area
ARA Airborne Radioactivity Area
RBA Radiological Buffer Area
FCA Fixed Contamination Area
SCA Soil Contamination Area
URMA Underground Radioactive Material Area

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

General Area Dose Rate
#@#(cm) Dose Rate at Distance From Source
*# Contact Dose Rate
#β / #γ Beta Corrected / Gamma Dose Rates
α
β
γ Gamma

□ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⬠ - Tritium Swipe


TRUPACT-II Parts
Inner Containment Vessel
TRUPACT-II Parts
Outer Containment Vessel
TICE

Tan Smear Report

Batch ID:	smear - 200301271738	**Count Date:**	1/27/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,302	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	ICV inner Plug / 1-smear, 2- Q-Tip		

COPY

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.30 ± 0.17		**Alpha:**	29.90 ± 0.23	
Beta Rate:	4.10 ± 0.64		**Beta:**	44.28 ± 0.07	

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030127173850-A1 (i)	Unknown	5.69	4.77	15.37	8.81	6.55	21.89
20030127174020-A2 (ii)	Unknown	-1.00	0.58	15.37	20.10	8.27	21.89

GW 1-31-03

A-57

Reviewed by: _____

Tan Smear Report

Batch ID:	smear - 200301271746	**Count Date:**	1/27/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,304	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	1-Smear upstream of of filter, 2- Q-Tip inside of port tool.		

Background (cpm)			**Efficiency (%)**		
Alpha Rate:	0.30	± 0.17	**Alpha:**	29.90	± 0.23
Beta Rate:	4.10	± 0.64	**Beta:**	44.28	± 0.07

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030127174625-A1 (2)	Unknown	-1.00	0.58	15.37	8.81	6.55	21.89
20030127174755-A2 (10)	Unknown	-1.00	0.58	15.37	11.07	6.93	21.89

GW 1-31-03

Reviewed by: [signature]

REV 010814.SMH

C:\Program Files\Tennelec Systems\Eclipse\smear report dpm.rpt

Print Date 1/29/03
Print Time 12:17:54PM

Tan Smear Report

Batch ID:	smear - 200301271750	**Count Date:**	1/27/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,305	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	Smears outer plug lid plug		

Background (cpm)				Efficiency (%)			
Alpha Rate:	0.30	±	0.17	**Alpha:**	29.90	±	0.23
Beta Rate:	4.10	±	0.64	**Beta:**	44.28	±	0.07

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030127175009-A1 (3)	Unknown	2.34	3.39	15.37	11.07	6.93	21.89
20030127175139-A2 (4)	Unknown	-1.00	0.58	15.37	17.84	7.96	21.89
20030127175249-A3 (5)	Unknown	2.34	3.39	15.37	6.55	6.15	21.89
20030127175400-A4 (6)	Unknown	-1.00	0.58	15.37	8.81	6.55	21.89

Gui 1-31-03

A-61

Reviewed by: _____

Tan Smear Report

Batch ID:	smear - 200301271729	**Count Date:**	1/27/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,300	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	ICV inline filter 1-2 smears/ 3-4 q-tips		

Background (cpm)				Efficiency (%)			
Alpha Rate:	0.30	±	0.17	**Alpha:**	29.90	±	0.23
Beta Rate:	4.10	±	0.64	**Beta:**	44.28	±	0.07

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030127172947-A1 (7)	Unknown	-1.00	0.58	15.37	22.36	8.57	21.89
20030127173117-A2 (8)	Unknown	-1.00	0.58	15.37	8.81	6.55	21.89
20030127173227-A3 (11)	Unknown	-1.00	0.58	15.37	20.10	8.27	21.89
20030127173337-A4 (12)	Unknown	-1.00	0.58	15.37	2.03	5.25	21.89

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Reviewed by:

441.45#
10/10/97
Rev. #03

RADIOLOGICAL SURVEY REPORT

COPY

BARCODE #

BLDG.: HOT SHOP/EXTENSION
AREA/ROOM: TRUPACT FLOOR PLAN
RWP #: 31002496 02
LOG #: 1
DATE: 1/28/03
TIME: ~~+200~~ 0845
1/23/03

☐ ROUTINE **JOB DESCRIPTION**
☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP

COMMENTS: General Area Dose Rate measured at waist level
TRU-PACT-157 Recovery project

RCT: F. Bush / F Bush
PRINT/SIGNATURE

REVIEWED BY:

INSTRUMENTS		
Type	Serial #	Efficiency
RA	800147	10 %
Electra	501530	10 %
		%
Scaler		%βγ
		%α
RO20	802084	

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		

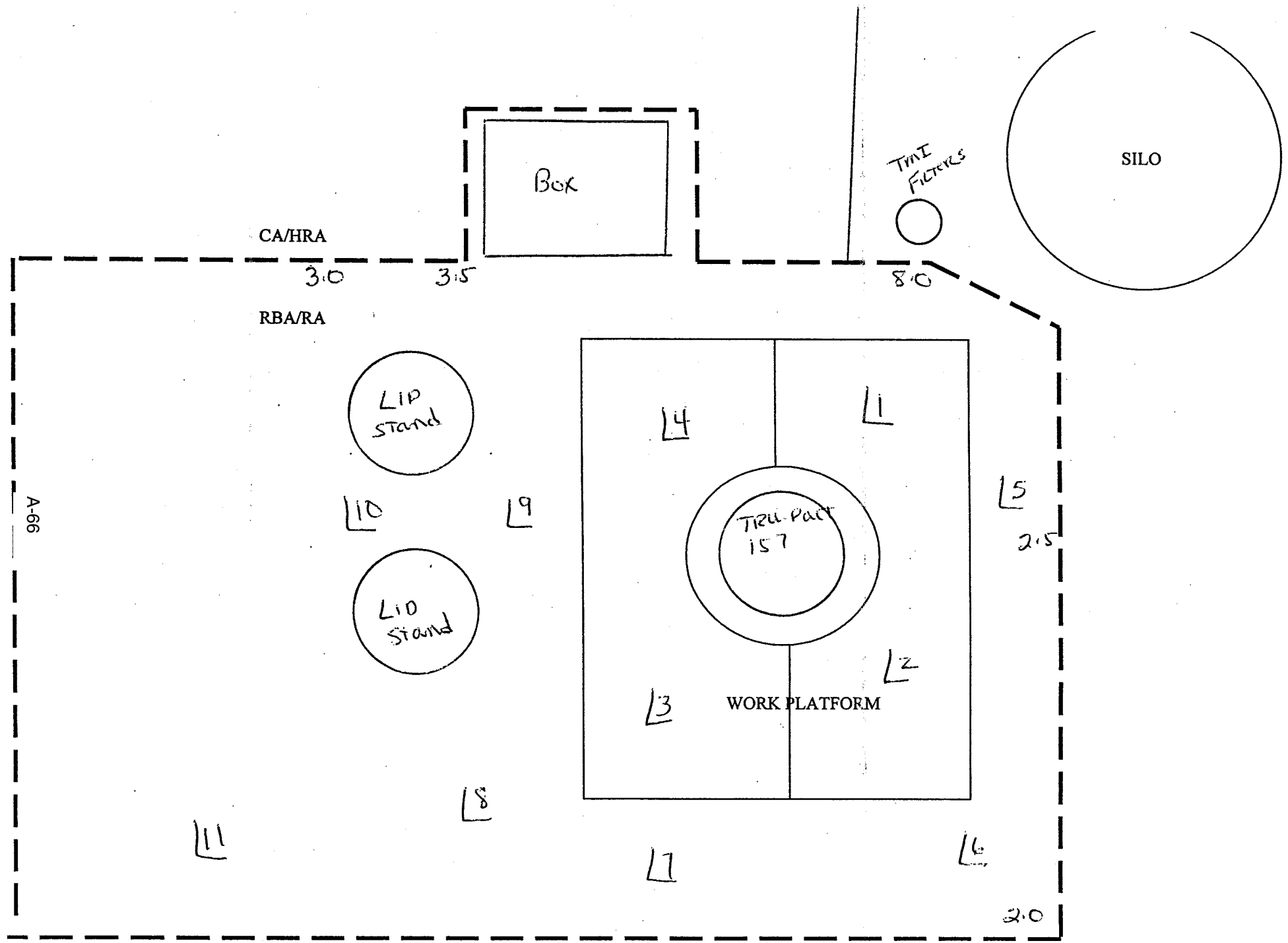
CA Contamination Area
HCA High Contamination Area
RA Radiation Area
HRA High Radiation Area
VHRA Very High Radiation Area
RMA Radioactive Material Area
ARA Airborne Radioactivity Area
RBA Radiological Buffer Area
FCA Fixed Contamination Area
SCA Soil Contamination Area
URMA Underground Radioactive Material Area
SOR Step-Off Pad

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

\# General Area Dose Rate
#@#(cm) Dose Rate at Distance From Source
*# Contact Dose Rate
#β / #γ Beta Corrected / Gamma Dose Rates
α Alpha
β Be
γ Ga
n Neutron

□ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⌂ - Tritium Swipe


Box
TMI Filters
SILO
CA/HRA
3.0
3.5
8.0
RBA/RA
LIP Stand
LID Stand
L10
L9
L4
L1
L5
2.5
TRU-PACT 157
L2
L3
WORK PLATFORM
L8
L11
L7
L6
2.0
A-66

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INSTRUMENTS		
Type	Serial #	Efficiency
		%
		%
		%
Scaler	324920	44.7 %βγ
		29.9 %α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	1000 / NA	20 / NA		
17			BOTTOM OF MID SLIP SHEET				
18			SIDES OF DRUMS 4, 6 + 7				
19			BOTTOM MID SLIPSHEET				
20			SIDES OF DRUMS 1, 2 + 7				
21			BOTTOM MID SLIPSHEET				
22			SIDES OF DRUMS 1 & 2				
23			BOTTOM OF MID SLIPSHEET				
24			SIDES OF DRUMS 2, 3 + 7				
25			BOTTOM OF MID SLIPSHEET				
26			SIDES OF DRUMS 2				
27			BOTTOM MID SLIP SHEET				
28			SIDE OF DRUMS 2 & 3				
29, 30			TOP OF DRUM #1				
	Smear Numbers correspond to Numbers on LB5100 Printout						
	See Printout for data. F. Bush						

CA	Contamination Area
HCA	High Contamination Area
RA	Radiation Area
HRA	High Radiation Area
VHRA	Very High Radiation Area
RMA	Radioactive Material Area
ARA	Airborne Radioactivity Area
RBA	Radiological Buffer Area
FCA	Fixed Contamination Area
SCA	Soil Contamination Area
URMA	Underground Radioactive Material Area
SOP	Step-Off Pad

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

#	General Area Dose Rate
#@#(cm)	Dose Rate at Distance From Source
*#	Contact Dose Rate
#β / #γ	Beta Corrected / Gamma Dose Rates
α	Alpha
β	Beta
γ	Gamma
n	

□ - Direct Scan

○ - Swipe (Smear)

L - Large Area Wipe (LAW)

△ - Air Sample

⬠ - Tritium Swipe

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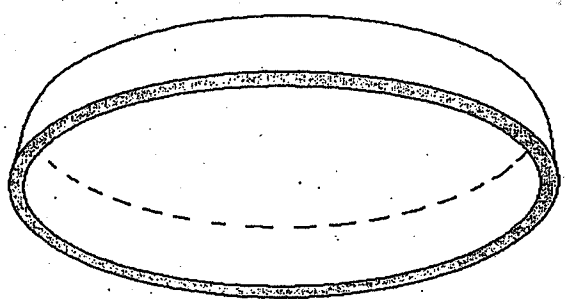
BARCODE #

BLDG.: 607	☐ ROUTINE **JOB DESCRIPTION**
AREA/ROOM: Hot Shop	☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP
RWP #: 3100249602	COMMENTS: TRU-Pact Recovery project
LOG #: 8	(Whatman Smears)
DATE: 1/28/03	Report Batch #'s = 5310, 5311
TIME: 1730	

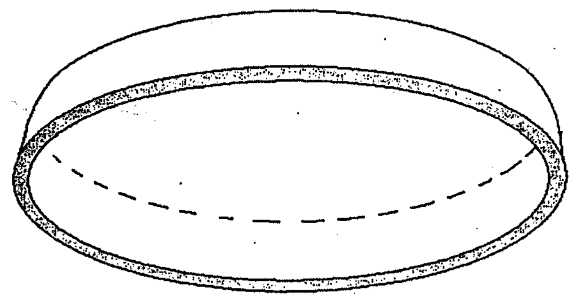
RCT: J McKinley / L McKinley / L Bird — F. Bush / F Bush
PRINT/SIGNATURE

REVIEWED BY: [signature]

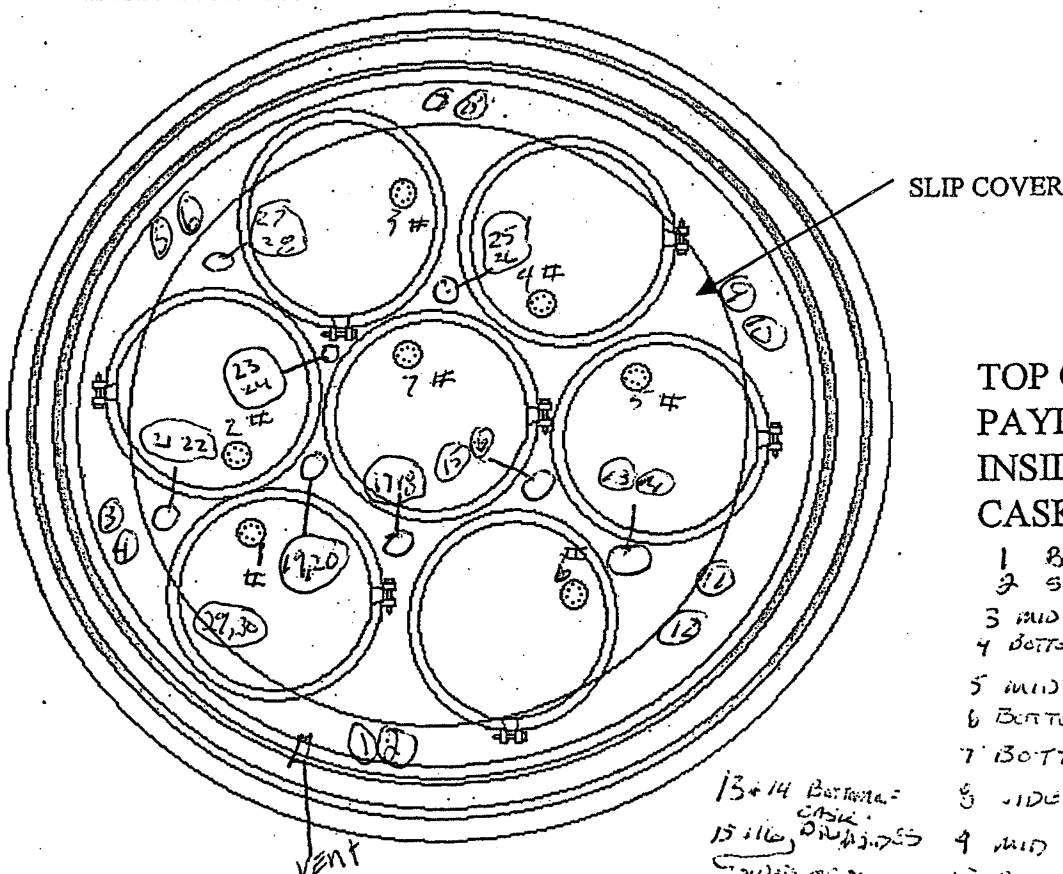
TRUPACT **CASK #** 157 **SURVEY #** W4 - 157 - 10



INSIDE INNER LID LEFT SIDE



INSIDE INNER LID RIGHT SIDE



TOP OF PAYLOAD INSIDE CASK

= Drum Number

1 Bottom of cask
2 side cask
3 mid slipsheet
4 Bottom of Drum #2
5 mid slipsheet
6 Bottom of Drum #3
7 Bottom of cask
8 side of cask
9 mid slip sheet
10 Bottom Drum #5
11 Bottom of cask
12 side of cask

13 + 14 Bottom of cask.
15 + 16 Drum sides
Sides of Drums 5, 6 + 7

Tan Smear Report

Batch ID:	smear - 200301280918	**Count Date:**	1/28/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,310	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	Inside ICV and on Drums	All smears were Whatman 50	

Background (cpm)				Efficiency (%)			
Alpha Rate:	0.10	±	0.10	**Alpha:**	29.90	±	0.23
Beta Rate:	4.30	±	0.66	**Beta:**	44.28	±	0.07

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030128091841-A1	Unknown	3.01	3.36	12.70	10.61	6.94	22.27
20030128092011-A2	Unknown	6.35	4.74	12.70	15.13	7.64	22.27
20030128092121-A3	Unknown	3.01	3.36	12.70	12.87	7.29	22.27
20030128092231-A4	Unknown	-0.33	0.33	12.70	6.10	6.16	22.27
20030128092341-A5	Unknown	6.35	4.74	12.70	35.46	10.21	22.27
20030128092451-A6	Unknown	-0.33	0.33	12.70	30.94	9.70	22.27
20030128092612-A7	Unknown	6.35	4.74	12.70	69.33	13.44	22.27
20030128092722-A8	Unknown	-0.33	0.33	12.70	37.71	10.45	22.27
20030128092832-A9	Unknown	-0.33	0.33	12.70	49.01	11.61	22.27
20030128092942-A10	Unknown	-0.33	0.33	12.70	46.75	11.39	22.27
20030128093052-A11	Unknown	3.01	3.36	12.70	21.91	8.58	22.27
20030128093202-A12	Unknown	6.35	4.74	12.70	37.71	10.45	22.27
20030128093312-A13	Unknown	-0.33	0.33	12.70	28.68	9.43	22.27
20030128093422-A14	Unknown	-0.33	0.33	12.70	105.47	16.20	22.27
20030128093542-A15	Unknown	3.01	3.36	12.70	26.42	9.15	22.27
20030128093542-A15	Unknown	3.19	3.54	13.26	28.32	9.62	22.97
20030128093542-A15	Unknown	3.01	3.36	12.70	49.01	11.61	22.27
20030128093652-A16	Unknown	-0.33	0.33	13.50	46.14	11.74	23.27
20030128093802-A17	Unknown	3.01	3.36	12.70	53.52	12.04	22.27
20030128093912-A18	Unknown	-0.33	0.33	12.70	55.78	12.25	22.27

Tan Smear Report

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.10	± 0.10	**Alpha:**	29.90	± 0.23
Beta Rate:	4.30	± 0.66	**Beta:**	44.28	± 0.07

All smears were whatman 50

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030128094022-A19	Unknown	3.01	3.36	12.70	12.87	7.29	22.27
20030128094132-A20	Unknown	-0.33	0.33	12.70	64.82	13.06	22.27
20030128094242-A21	Unknown	-0.33	0.33	12.70	87.40	14.88	22.27
20030128094402-A22	Unknown	-0.33	0.33	12.70	73.85	13.82	22.27
20030128094513-A23	Unknown	3.01	3.36	12.70	39.97	10.70	22.27
20030128094623-A24	Unknown	-0.33	0.33	12.70	73.85	13.82	22.27

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Reviewed by: _____

Tan Smear Report

Batch ID:	smear - 200301280953	**Count Date:**	1/28/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,311	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	Inside ICV and on Drums ~~1-6 cloth, 7-12 Whatman~~ GVC 1-30-03 All Whatman Smears		

Background (cpm)				Efficiency (%)			
Alpha Rate:	0.10	±	0.10	**Alpha:**	29.90	±	0.23
Beta Rate:	4.30	±	0.66	**Beta:**	44.28	±	0.07

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
GVC 1-30-03							
20030128095355-A1 (25)	Unknown	-0.33	0.33	12.70	19.65	8.28	22.27
20030128095525-A2 (26)	Unknown	3.01	3.36	12.70	6.10	6.16	22.27
20030128095635-A3 (27)	Unknown	3.01	3.36	12.70	15.13	7.64	22.27
20030128095745-A4 (28)	Unknown	-0.33	0.33	12.70	10.61	6.94	22.27
20030128095855-A5 (29)	Unknown	-0.33	0.33	12.70	26.42	9.15	22.27
20030128100005-A6 (30)	Unknown	-0.33	0.33	12.70	30.94	9.70	22.27
~~20030128100125-A7~~	Unknown	3.01	3.36	12.70	82.88	14.54	~~22.27~~
20030128100236-A8	Unknown	-0.33	0.33	12.70	~~33.20~~	9.95	22.27
20030128100346-A9	Unknown	3.01	3.36	12.70	39.97	10.70	22.27
20030128100456-A10	Unknown	3.01	3.36	12.70	44.49	11.16	22.27
~~20030128100606-A11~~	Unknown	-0.33	0.33	12.70	~~8.36~~	6.56	22.27
20030128100716-A12	Unknown	-0.33	0.33	12.70	26.42	9.15	~~22.27~~

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RADIOLOGICAL SURVEY REPORT

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INSTRUMENTS		
Type	Serial #	Efficiency
		%
		%
		%
Scaler	324920	44.1 %βγ
		29.9 %α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	1000 / N/A	20 / N/A		
1			Bottom and side of CASK				
2			Bottom and side of CASK				
3			Bottom and side of CASK				
4			Bottom and side of DRUMS 5-6-7 ~~Bottom and Side of Cask~~ SN 12803				
5			Bottom of DRUMS 1,2,7				
6			Bottom of DRUMS 3,4,7				
			See LB5100 printout for data.				

CA	Contamination Area
HCA	High Contamination Area
RA	Radiation Area
HRA	High Radiation Area
VHRA	Very High Radiation Area
RMA	Radioactive Material Area
ARA	Airborne Radioactivity Area
RBA	Radiological Buffer Area
FCA	Fixed Contamination Area
SCA	Soil Contamination Area
URMA	Underground Radioactive Material Area
SOP	Step-Off Pad

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

#	General Area Dose Rate
#@#(cm)	Dose Rate at Distance From Source
*#	Contact Dose Rate
#β / #γ	Beta Corrected / Gamma Dose Rates
α	Alpha
β	Beta
γ	Gamma
n	Neutron

□ - Direct Scan

○ - Swipe (Smear)

L - Large Area Wipe (LAW)

△ - Air Sample

⬡ - Tritium Swipe

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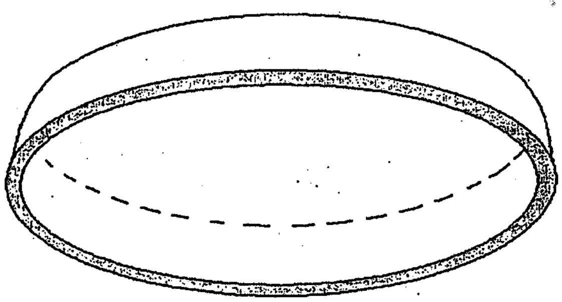
RADIOLOGICAL SURVEY REPORT

BARCODE #

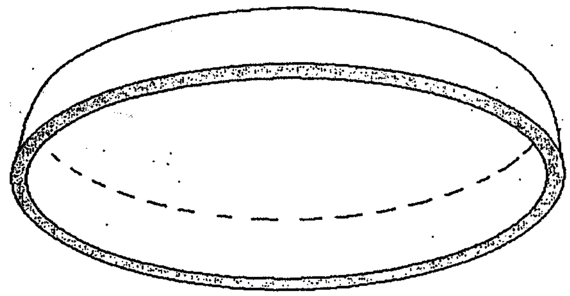
BLDG.: 607	☐ ROUTINE **JOB DESCRIPTION**
AREA/ROOM: Hot Shop	☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP
RWP #: 3100 2496 -02	COMMENTS: Tru-Pact Recovery Project
LOG #: 8	(cloth Smears)
DATE: 1-28-03	Report Batch # 5311
TIME: 1230	

RCT: McKinley / L. McKinley F. Bush / F Bush REVIEWED BY: [signature]
L. Bird / [signature]
PRINT/SIGNATURE

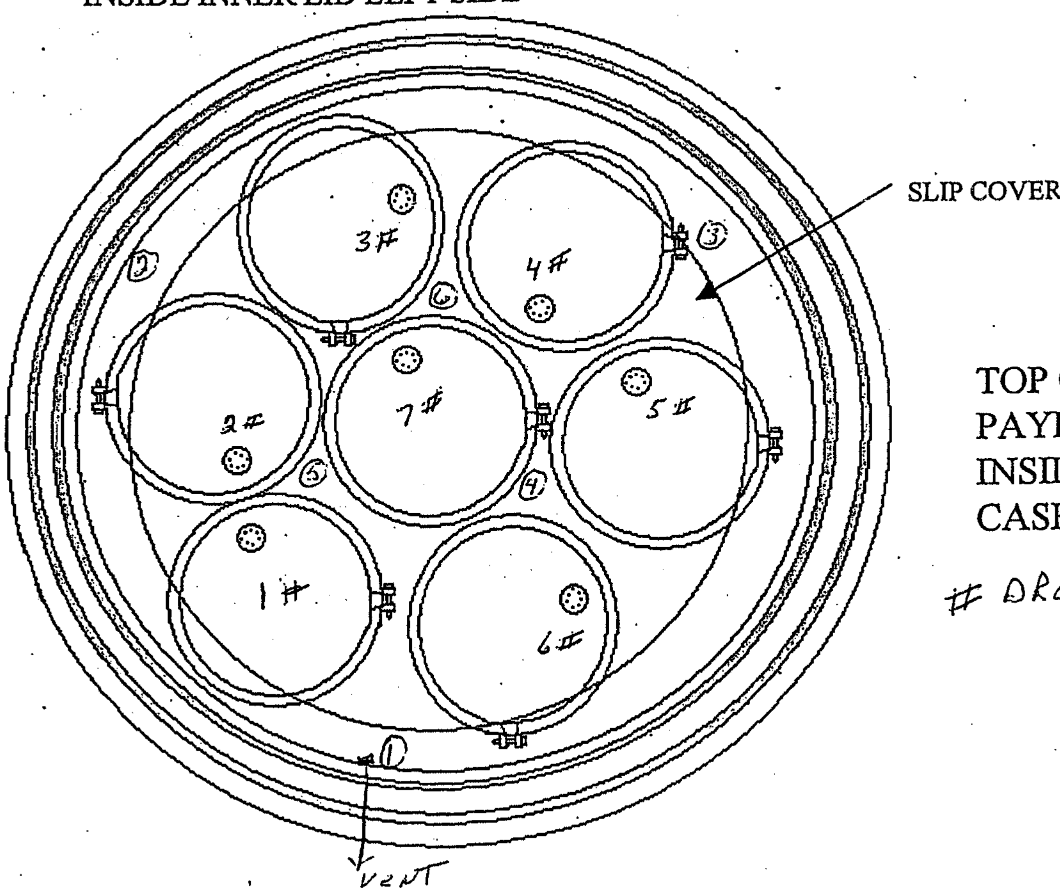
TRUPACT **CASK #** 157 **SURVEY #** NA - 157 - 3



INSIDE INNER LID LEFT SIDE



INSIDE INNER LID RIGHT SIDE



TOP OF PAYLOAD INSIDE CASK

DRUM NUMBER

Tan Smear Report

Batch ID:	smear - 200301280953	**Count Date:**	1/28/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,311	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	Inside ICV and on Drums ~~1-6 cloth, 7-12 Whatman~~ 1-6 cloth		

Background (cpm)				Efficiency (%)			
Alpha Rate:	0.10	±	0.10	**Alpha:**	29.90	±	0.23
Beta Rate:	4.30	±	0.66	**Beta:**	44.28	±	0.07

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030128095355-A1	Unknown	-0.33	0.33	12.70	19.65	8.28	22.27
20030128095525-A2	Unknown	3.01	3.36	12.70	6.10	6.16	22.27
20030128095635-A3	Unknown	3.01	3.36	12.70	15.13	7.64	22.27
20030128095745-A4	Unknown	-0.33	0.33	12.70	10.61	6.94	22.27
20030128095855-A5	Unknown	-0.33	0.33	12.70	26.42	9.15	22.27
20030128100005-A6	Unknown	-0.33	0.33	12.70	30.94	9.70	22.27
20030128100125-A7 1	Unknown	3.01	3.36	12.70	82.88	14.54	22.27
20030128100236-A8 2	Unknown	-0.33	0.33	12.70	33.20	9.95	22.27
20030128100346-A9 3	Unknown	3.01	3.36	12.70	39.97	10.70	22.27
20030128100456-A10 4	Unknown	3.01	3.36	12.70	44.49	11.16	22.27
20030128100606-A11 5	Unknown	-0.33	0.33	12.70	8.36	6.56	22.27
20030128100716-A12 6	Unknown	-0.33	0.33	12.70	26.42	9.15	22.27

CC 1-30-03

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Reviewed by: _____

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RADIOLOGICAL SURVEY REPORT

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BARCODE #

BLDG.: TAN hot shop
AREA/ROOM: Trupact Tent
RWP #: 31002496
LOG #: 9
DATE: 1/28/03
TIME: 1305

☐ ROUTINE **JOB DESCRIPTION**
☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP
COMMENTS: ~~General Area Dose Rate measured at waist level~~ 9:30-03
Pre-job survey of inside of tent
Report Batch # 5317

RCT: Jon Johnston
PRINT/SIGNATURE

REVIEWED BY:

INSTRUMENTS		
Type	Serial #	Efficiency
		%
		%
	324920	44.2 %
Scaler	~~See LB5100 Printout~~	~~%βγ~~
		29.9 %α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		
1-15			See Map	See LB5100 Printout	-		

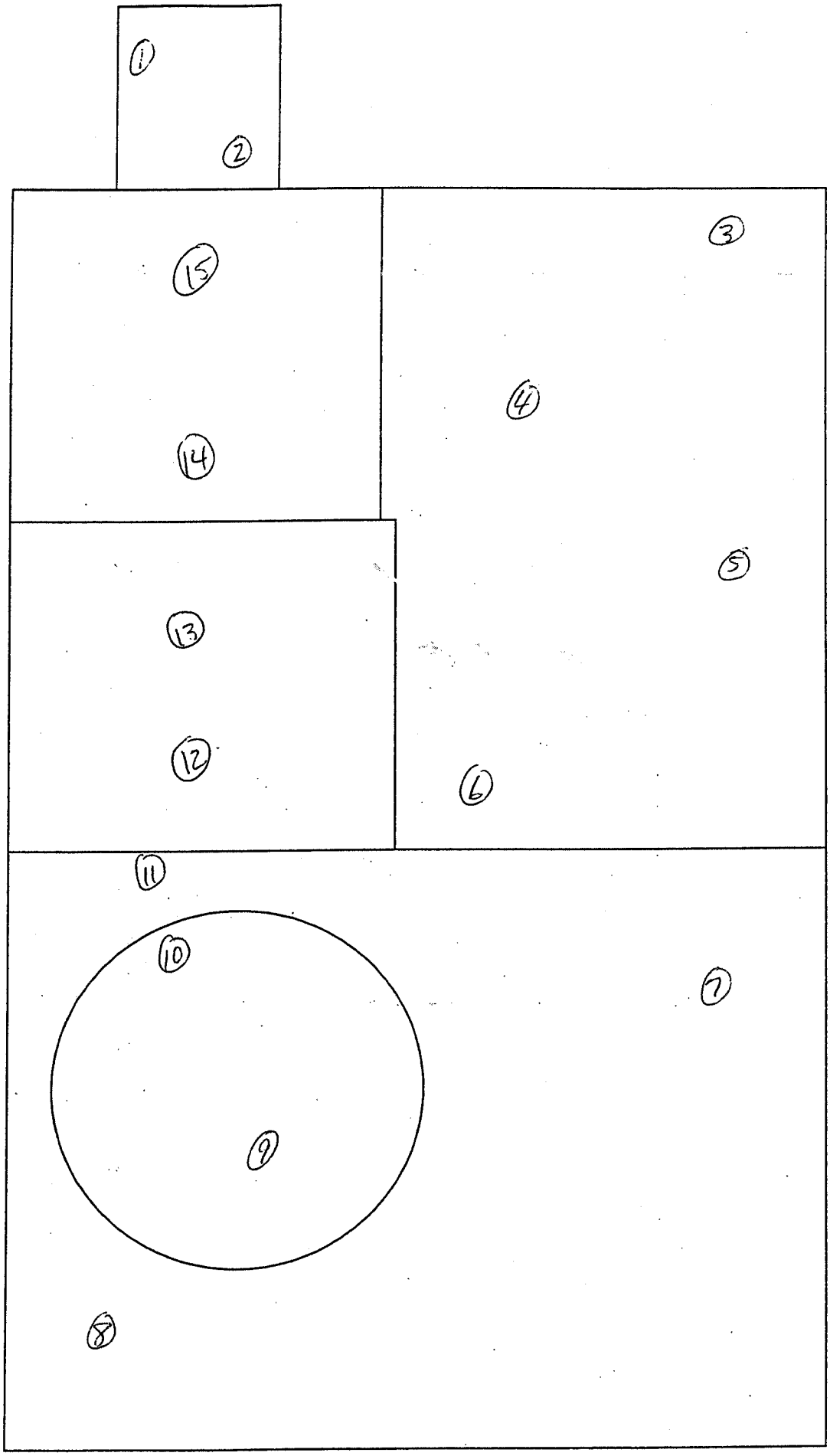
CA Contamination Area
HCA High Contamination Area
RA Radiation Area
HRA High Radiation Area
VHRA Very High Radiation Area
RMA Radioactive Material Area
ARA Airborne Radioactivity Area
RBA Radiological Buffer Area
FCA Fixed Contamination Area
SCA Soil Contamination Area

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

General Area Dose Rate
#@#(cm) Dose Rate at Distance From Source
*# Contact Dose Rate
#β / #γ Beta Corrected / Gamma Dose Rates
α A-79
β

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⬠ - Tritium Swipe


1
2
3
15
4
14
5
13
12
6
11
10
7
9
8

Pg. 2c

Tan Smear Report

Batch ID:	smear - 200301281241	**Count Date:**	1/28/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,317	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	TRU-PACT 157 RECOVERY-PRE-USE TENT SMEARS		

COPY

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.10 ± 0.10		**Alpha:**	29.90 ± 0.23	
Beta Rate:	4.30 ± 0.66		**Beta:**	44.28 ± 0.07	

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030128124145-A1	Unknown	-0.33	0.33	12.70	146.12	18.82	22.27
20030128124316-A2	Unknown	-0.33	0.33	12.70	234.19	23.52	22.27
20030128124426-A3	Unknown	-0.33	0.33	12.70	130.31	17.85	22.27
20030128124536-A4	Unknown	3.01	3.36	12.70	85.14	14.71	22.27
20030128124646-A5	Unknown	-0.33	0.33	12.70	39.97	10.70	22.27
20030128124756-A6	Unknown	3.01	3.36	12.70	184.51	21.00	22.27
20030128124916-A7	Unknown	-0.33	0.33	12.70	134.82	18.13	22.27
20030128125026-A8	Unknown	-0.33	0.33	12.70	130.31	17.85	22.27
20030128125136-A9	Unknown	-0.33	0.33	12.70	184.51	21.00	22.27
20030128125246-A10	Unknown	3.01	3.36	12.70	60.30	12.66	22.27
20030128125356-A11	Unknown	-0.33	0.33	12.70	21.91	8.58	22.27
20030128125506-A12	Unknown	-0.33	0.33	12.70	51.27	11.83	22.27
20030128125616-A13	Unknown	3.01	3.36	12.70	30.94	9.70	22.27
20030128125726-A14	Unknown	-0.33	0.33	12.70	137.08	18.27	22.27
20030128125846-A15	Unknown	-0.33	0.33	12.70	30.94	9.70	22.27

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Reviewed by: _____

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RADIOLOGICAL SURVEY REPORT

COPY

BARCODE #

BLDG.: TAN Hot Shop
AREA/ROOM: Trupact Tent
RWP #: 3100296
LOG #: 9
DATE: 1-28-03
TIME: 1359

☐ ROUTINE **JOB DESCRIPTION**
☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP
COMMENTS: ~~General Area Dose Rate measured at waist level~~ ECC 1-30-03
Top of trupact tent after payload was placed in tent and tent was sealed up.
Report Batch # 5318

RCT: Jon Johnston / PRINT/SIGNATURE REVIEWED BY:

INSTRUMENTS		
Type	Serial #	Efficiency
		%
		%
	32482c	44.2 %
Scaler	~~See LB5100 Printout~~	~~%βγ~~ C
		27.8 %α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		
1-6			See Map	See LB5100 Printout			

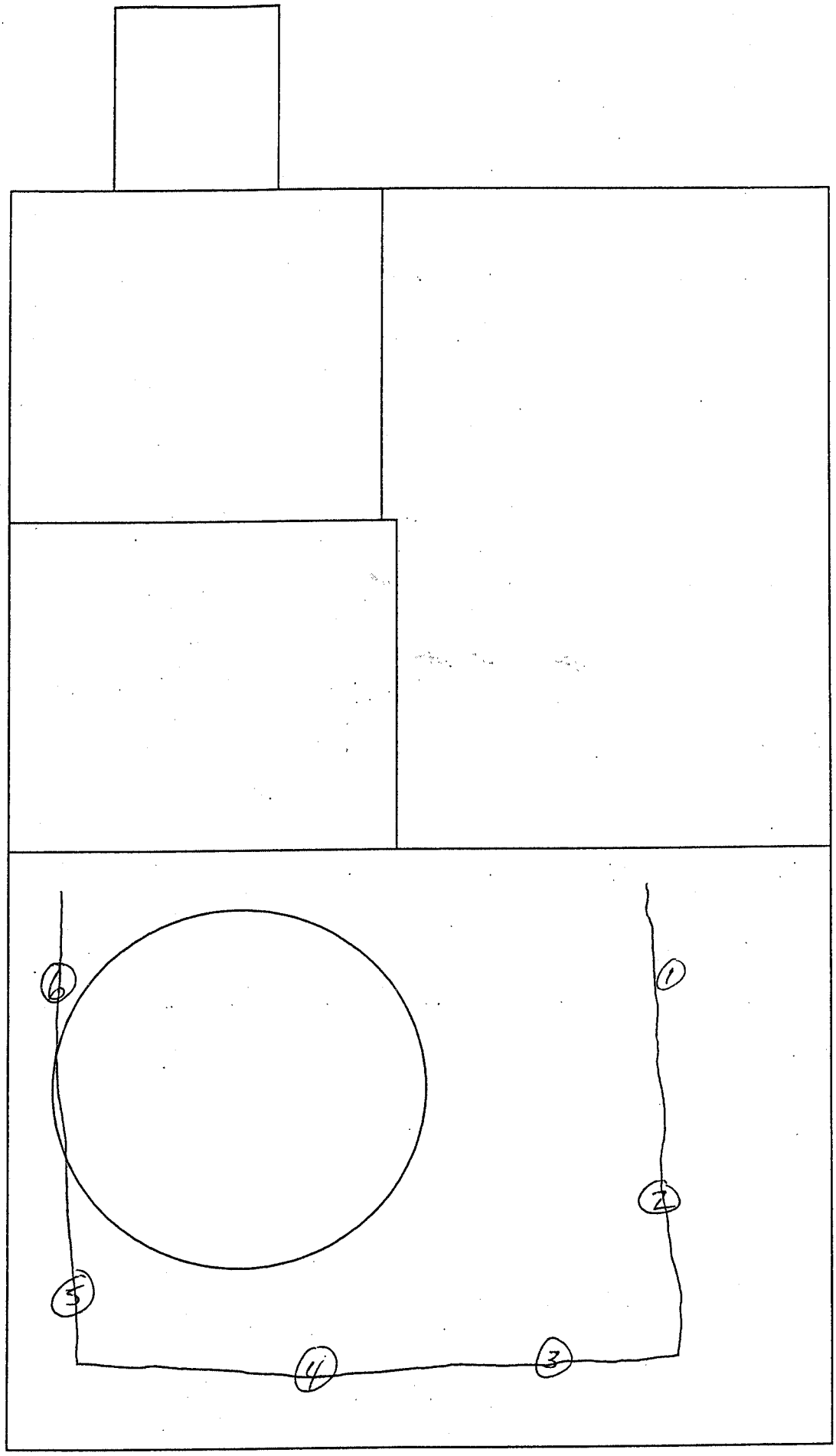
CA Contamination Area
HCA High Contamination Area
RA Radiation Area
HRA High Radiation Area
VHRA Very High Radiation Area
RMA Radioactive Material Area
ARA Airborne Radioactivity Area
RBA Radiological Buffer Area
FCA Fixed Contamination Area
SCA Soil Contamination Area
URMA Underground Radioactive Material Area

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

General Area Dose Rate
#@#(cm) Dose Rate at Distance From Source
*# Contact Dose Rate
#β / #γ Beta Corrected / Gamma Dose Rates
α
β
γ Gamma

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⬠ - Tritium Swipe


6
1
2
5
4
3

Tan Smear Report

Batch ID:	smear - 200301281349	**Count Date:**	1/28/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,318	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	OUTSIDE OF TRU-PACT 157 CONTAINMENT TENT		

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.10 ± 0.10		**Alpha:**	29.90 ± 0.23	
Beta Rate:	4.30 ± 0.66		**Beta:**	44.28 ± 0.07	

mple ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
A-85 28134957-A1	Unknown	-0.33	0.33	12.70	1.58	5.26	22.27
) 28135127-A2	Unknown	-0.33	0.33	12.70	33.20	9.95	22.27
)030128135238-A3	Unknown	-0.33	0.33	12.70	39.97	10.70	22.27
)030128135348-A4	Unknown	-0.33	0.33	12.70	30.94	9.70	22.27
)030128135458-A5	Unknown	-0.33	0.33	12.70	28.68	9.43	22.27
)030128135608-A6	Unknown	-0.33	0.33	12.70	51.27	11.83	22.27

COPY

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10/10/97
Rev. #03

RADIOLOGICAL SURVEY REPORT

COPY

INSTRUMENTS		
Type	Serial #	Efficiency
		%
		%
		%
Scaler	324920	44.2 %βγ
		24.9 %α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	100501 MA	201 MA		
			See LD Scan Printout	data.			

CA	Contamination Area
HCA	High Contamination Area
RA	Radiation Area
HRA	High Radiation Area
VHRA	Very High Radiation Area
RMA	Radioactive Material Area
ARA	Airborne Radioactivity Area
RBA	Radiological Buffer Area
FCA	Fixed Contamination Area
SCA	Soil Contamination Area
URMA	Underground Radioactive Material Area
SOP	Step-Off Pad

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

#	General Area Dose Rate
#@#(cm)	Dose Rate at Distance From Source
*#	Contact Dose Rate
#β / #γ	Beta Corrected / Gamma Dose Rates
α	Alpha
β	Beta
γ	Gamma
n	

□ - Direct Scan

○ - Swipe (Smear)

L - Large Area Wipe (LAW)

△ - Air Sample

⌂ - Tritium Swipe

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RADIOLOGICAL SURVEY REPORT

BARCODE #

BLDG.: 607
AREA/ROOM: Hot Shop
RWP #: 3100 2496 02
LOG #: 8
DATE: 1-28-03
TIME: 1430

☐ ROUTINE **JOB DESCRIPTION**
☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP
COMMENTS: CASK #157 ICV inside recovery

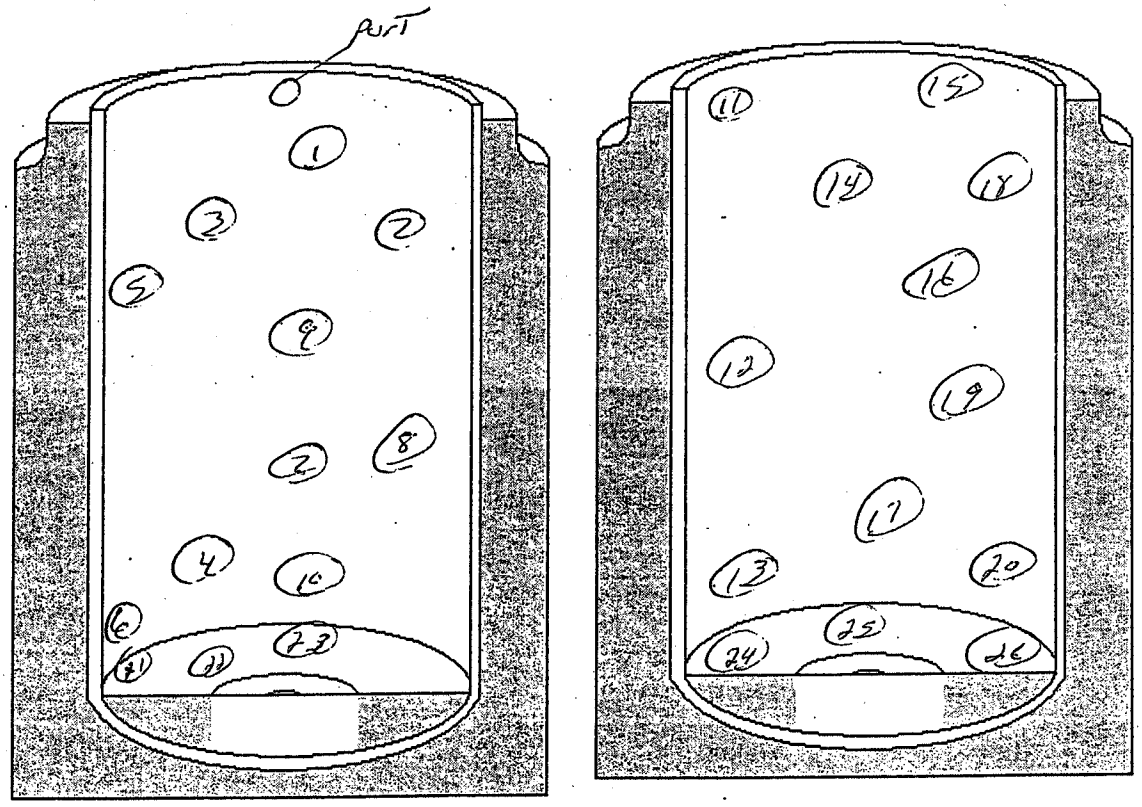
Report Batch #'s: 5319,
Hlara TASK # 29001689 0118

RCT: L. Bird / [signature] REVIEWED BY: [signature]
PRINT/SIGNATURE

TRUPACT

Cask# 157

Survey NH-157-4



INSIDE OF ICV

Tan Smear Report

Batch ID:	smear - 200301281435	**Count Date:**	1/28/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,319	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	SMEARS TAKEN INSIDE TRU-PACT 157 ICV		

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.10 ± 0.10		**Alpha:**	29.90 ± 0.23	
Beta Rate:	4.30 ± 0.66		**Beta:**	44.28 ± 0.07	

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030128143520-A1	Unknown	3.01	3.36	12.70	3.84	5.73	22.27
20030128143651-A2	Unknown	-0.33	0.33	12.70	17.39	7.96	22.27
20030128143801-A3	Unknown	-0.33	0.33	12.70	8.36	6.56	22.27
20030128143911-A4	Unknown	-0.33	0.33	12.70	-0.68	4.75	22.27
20030128144021-A5	Unknown	-0.33	0.33	12.70	37.71	10.45	22.27
20030128144131-A6	Unknown	-0.33	0.33	12.70	37.71	10.45	22.27
20030128144251-A7	Unknown	6.35	4.74	12.70	55.78	12.25	22.27
20030128144401-A8	Unknown	-0.33	0.33	12.70	33.20	9.95	22.27
20030128144511-A9	Unknown	-0.33	0.33	12.70	28.68	9.43	22.27
20030128144621-A10	Unknown	-0.33	0.33	12.70	37.71	10.45	22.27
20030128144731-A11	Unknown	-0.33	0.33	12.70	19.65	8.28	22.27
20030128144841-A12	Unknown	-0.33	0.33	12.70	26.42	9.15	22.27
20030128144951-A13	Unknown	3.01	3.36	12.70	12.87	7.29	22.27
20030128145102-A14	Unknown	-0.33	0.33	12.70	134.82	18.13	22.27
20030128145222-A15	Unknown	-0.33	0.33	12.70	39.97	10.70	22.27
20030128145332-A16	Unknown	-0.33	0.33	12.70	33.20	9.95	22.27
20030128145442-A17	Unknown	3.01	3.36	12.70	53.52	12.04	22.27
20030128145552-A18	Unknown	-0.33	0.33	12.70	17.39	7.96	22.27
20030128145702-A19	Unknown	-0.33	0.33	12.70	24.16	8.87	22.27
20030128145812-A20	Unknown	3.01	3.36	12.70	44.49	11.16	22.27

A-89

Tan Smear Report

Background (cpm)				Efficiency (%)			
Alpha Rate:	0.10	±	0.10	**Alpha:**	29.90	±	0.23
Beta Rate:	4.30	±	0.66	**Beta:**	44.28	±	0.07

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030128145922-A21	Unknown	3.01	3.36	12.70	53.52	12.04	22.27
20030128150042-A22	Unknown	-0.33	0.33	12.70	62.56	12.86	22.27
20030128150152-A23	Unknown	-0.33	0.33	12.70	28.68	9.43	22.27
20030128150302-A24	Unknown	-0.33	0.33	12.70	46.75	11.39	22.27
20030128150412-A25	Unknown	-0.33	0.33	12.70	10.61	6.94	22.27
20030128150522-A26	Unknown	-0.33	0.33	12.70	30.94	9.70	22.27

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10/10/97
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RADIOLOGICAL SURVEY REPORT

COPY

BARCODE #

BLDG.: HOT SHOP/EXTENSION
AREA/ROOM: TRUPACT FLOOR PLAN
RWP #: 3100296 02
LOG #: 10
DATE: 1-28-03
TIME: 1450

☐ ROUTINE **JOB DESCRIPTION**
☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP

COMMENTS: ~~General Area Dose Rate measured at waist level~~ 1-31-03
Exit Survey of 2BH area after placing Trupac Load into Tent & Surveying Interior of ECV.
Report Batch # 5320

RCT: K Jackson / K Jackson
PRINT/SIGNATURE

REVIEWED BY: JTE

INSTRUMENTS		
Type	Serial #	Efficiency
2A	850597	10 %
Electra	801527	~~25~~ 10 %
—	—	1-24-03 %
Scaler	324920	44 %βγ
		29 %α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		
1-6			See Survey Map	See printout			
	1-12		See Survey Map			<1000	<20

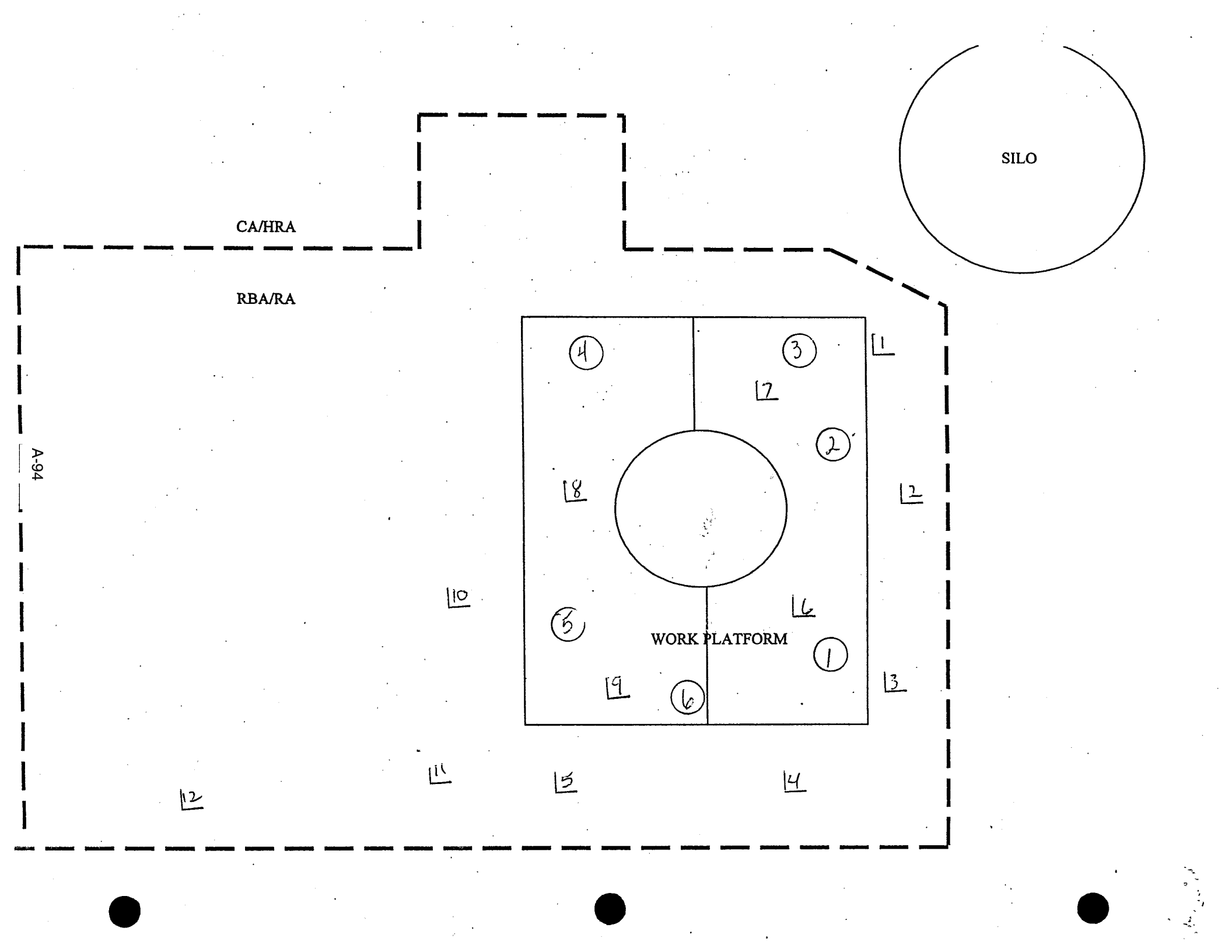
CA Contamination Area
HCA High Contamination Area
RA Radiation Area
HRA High Radiation Area
VHRA Very High Radiation Area
RMA Radioactive Material Area
ARA Airborne Radioactivity Area
RBA Radiological Buffer Area
FCA Fixed Contamination Area

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

General Area Dose Rate
#@#(cm) Dose Rate at Distance From Source
*# se Rate
#β / #γ A-93 ted / Gamma Dose Rates
α

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
∩ - Tritium Swipe


SILO
CA/HRA
RBA/RA
A-94
WORK PLATFORM
1
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19

Tan Smear Report

D:	smear - 200301281438	**Count Date:**	1/28/03
	B	**Count Minutes:**	1.0
:	LB5100 #324920	**Count Mode:**	Simultaneous
Key:	5,320	**Operating Volts:**	1320
d Geometry:	1/4" Stainless Steel		
Location:			

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.10 ± 0.10		**Alpha:**	29.90 ± 0.23	
Beta Rate:	4.30 ± 0.66		**Beta:**	44.28 ± 0.07	

ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
A-95 GLL 1-31-03							
36-B27 (1)	Unknown	3.01	3.36	12.70	46.75	11.39	22.27
48-B28 (2)	Unknown	-0.33	0.33	12.70	37.71	10.45	22.27
8150858-B29 (3)	Unknown	-0.33	0.33	12.70	39.97	10.70	22.27
8151008-B30 (4)	Unknown	-0.33	0.33	12.70	49.01	11.61	22.27
8151118-B43 (5)	Unknown	-0.33	0.33	12.70	6.10	6.16	22.27
8151238-B44 (6)	Unknown	-0.33	0.33	12.70	10.61	6.94	22.27

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RADIOLOGICAL SURVEY REPORT

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INSTRUMENTS		
Type	Serial #	Efficiency
elec T	SN 1534	10 %
		%
		%
Scaler	324920	44.25 %βγ
		29.9 %α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	4,000 / 2,500	220 / NA		
1-12			See 43500 printout sheet				
	1-4		OW CASK Side			NA	< 20

CA	Contamination Area
HCA	High Contamination Area
RA	Radiation Area
HRA	High Radiation Area
VHRA	Very High Radiation Area
RMA	Radioactive Material Area
ARA	Airborne Radioactivity Area
RBA	Radiological Buffer Area
FCA	Fixed Contamination Area
SCA	Soil Contamination Area
URMA	Underground Radioactive Material Area
SOP	Step-Off Pad

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

#	General Area Dose Rate
#@#(cm)	Dose Rate at Distance From Source
*#	Contact Dose Rate
#β / #γ	Beta Corrected / Gamma Dose Rates
α	Alpha
β	Beta
γ	Gamma
n	

□ - Direct Scan

○ - Swipe (Smear)

L - Large Area Wipe (LAW)

△ - Air Sample

⬡ - Tritium Swipe

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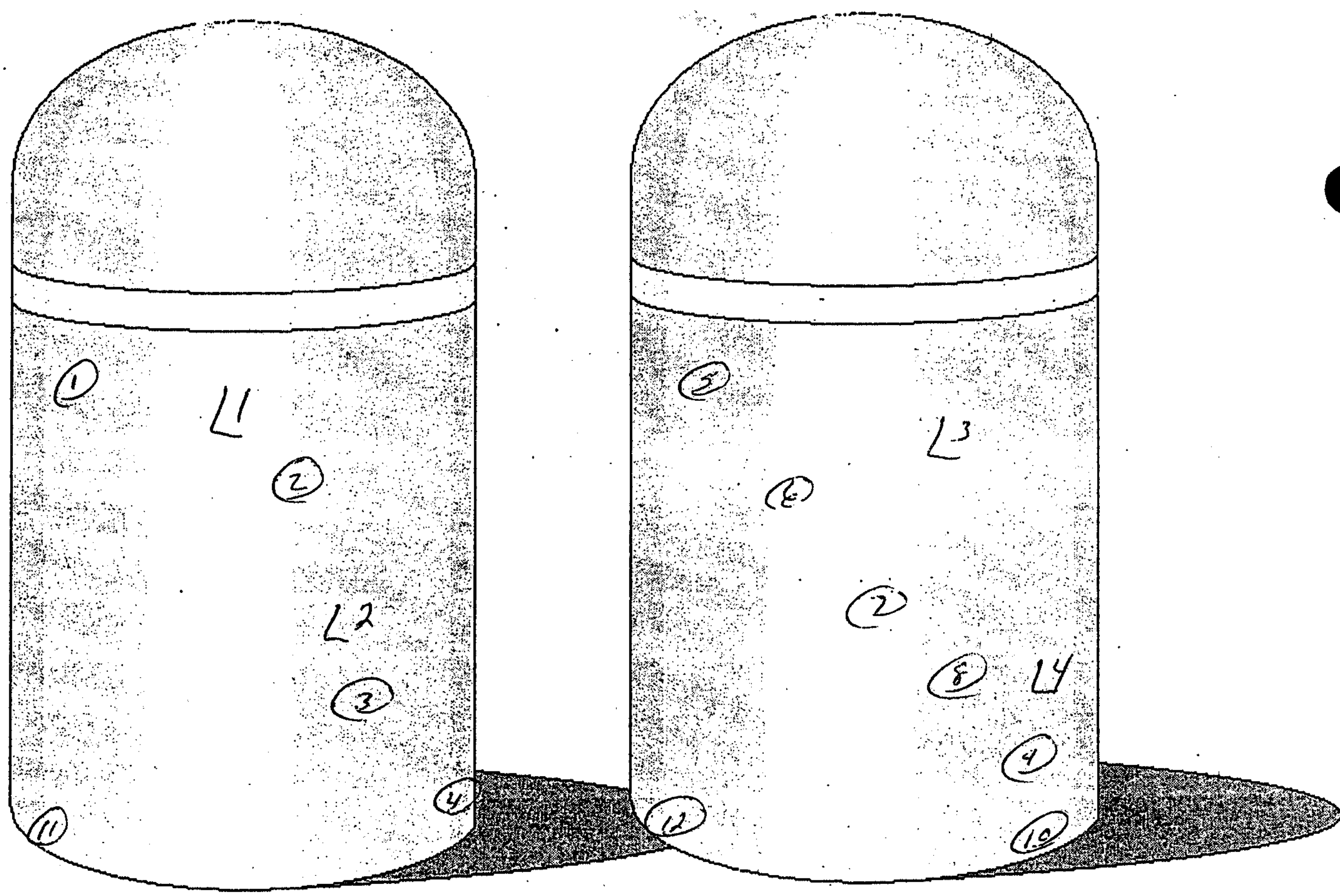
RADIOLOGICAL SURVEY REPORT

BARCODE #

BLDG.: 607	☐ ROUTINE **JOB DESCRIPTION**
AREA/ROOM: HotShop	☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP
RWP #: 3100 7496 02	COMMENTS: Removal of ICV CASK # 157
LOG #: 15	Report Batch # 5326
DATE: 1-28-03	
TIME: 1630	Alara TASK # 2900 1689 0117

RCT: [signature] / [signature] PRINT/SIGNATURE REVIEWED BY: [signature]

TRUPACT CONTAINER ICV



Tan Smear Report

Batch ID:	smear - 200301281743	**Count Date:**	1/28/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,326	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	OUTSIDE OF ICV AFTER PAYLOAD REMOVED		

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.10	± 0.10	**Alpha:**	29.90	± 0.23
Beta Rate:	4.30	± 0.66	**Beta:**	44.28	± 0.07

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030128174359-A1 (1)	Unknown	3.01	3.36	12.70	3.84	5.73	22.27
20030128174530-A2 (2)	Unknown	3.01	3.36	12.70	3.84	5.73	22.27
20030128174640-A3 (3)	Unknown	-0.33	0.33	12.70	12.87	7.29	22.27
20030128174750-A4 (4)	Unknown	-0.33	0.33	50.77	1.04	10.86	63.07
20030128174750-A4 (5)	Unknown	-0.33	0.33	12.70	6.10	6.16	22.27
20030128174750-A4 (6)	Unknown	-0.33	0.33	14.29	8.46	7.03	24.25
20030128174900-A5 (7)	Unknown	-0.33	0.33	12.70	24.16	8.87	22.27
20030128175010-A6 (8)	Unknown	-0.33	0.33	12.70	44.49	11.16	22.27
20030128175130-A7 (9)	Unknown	-0.33	0.33	12.70	53.52	12.04	22.27
20030128175240-A8 (10)	Unknown	3.01	3.36	12.70	46.75	11.39	22.27
20030128175350-A9 (11)	Unknown	-0.33	0.33	12.70	28.68	9.43	22.27
20030128175500-A10 (12)	Unknown	3.01	3.36	12.70	28.68	9.43	22.27

GK 1-29-03

A-99

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Rev. #03

RADIOLOGICAL SURVEY REPORT

COPY

BARCODE #

BLDG.: HOT SHOP/EXTENSION
AREA/ROOM: TRUPACT FLOOR PLAN
RWP #: 3100296 02
LOG #: 16
DATE: 1/28/03
TIME: 1630

☐ ROUTINE **JOB DESCRIPTION**
☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP

COMMENTS: ~~General Area Dose Rate measured at waist level~~ GLC 1-31-03
TRUPACT Recovery
Report Batch # 53272

RCT: F. Bush / J. Bush
PRINT/SIGNATURE

REVIEWED BY:

INSTRUMENTS		
Type	Serial #	Efficiency
177-L	801973	10 %
177-6	802224	10 %
		%
Scaler	324920	44.3 %βγ
		29.9 %α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		
			See printout and map.				

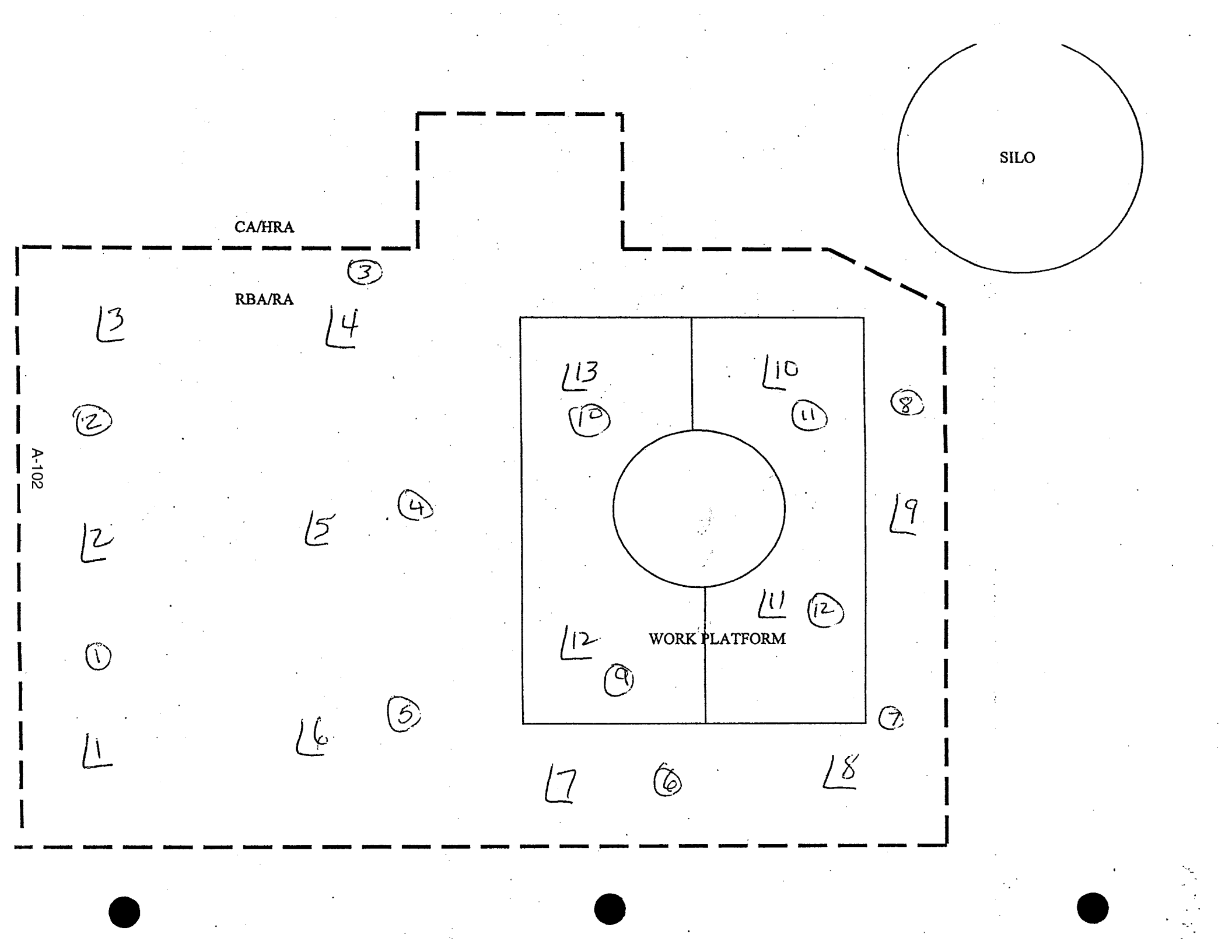
CA Contamination Area
HCA High Contamination Area
RA Radiation Area
HRA High Radiation Area
VHRA Very High Radiation Area
RMA Radioactive Material Area
ARA Airborne Radioactivity Area
RBA Radiological Buffer Area
FCA Fixed Contamination Area

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

General Area Dose Rate
#@#(cm) Dose Rate at Distance From Source
*# Contact Dose Rate
#β / #γ A-101 cted / Gamma Dose Rates
α

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⌂ - Tritium Swipe


SILO
CA/HRA
RBA/RA
A-102
WORK PLATFORM

Tan Smear Report

Batch ID:	smear - 200301281616	**Count Date:**	1/28/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,322	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	RELEASE OF EXTENDED RBA FOR CAT. A CLOTHING		

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.10 ± 0.10		**Alpha:**	29.90 ± 0.23	
Beta Rate:	4.30 ± 0.66		**Beta:**	44.28 ± 0.07	

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030128161659-A1	Unknown	-0.33	0.33	12.70	10.61	6.94	22.27
20030128161830-A2	Unknown	-0.33	0.33	12.70	15.13	7.64	22.27
20030128161940-A3	Unknown	-0.33	0.33	12.70	19.65	8.28	22.27
20030128162050-A4	Unknown	-0.33	0.33	12.70	15.13	7.64	22.27
20030128162200-A5	Unknown	-0.33	0.33	12.70	33.20	9.95	22.27
20030128162310-A6	Unknown	-0.33	0.33	12.70	46.75	11.39	22.27
20030128162430-A7	Unknown	-0.33	0.33	12.70	78.37	14.18	22.27
20030128162540-A8	Unknown	-0.33	0.33	12.70	21.91	8.58	22.27
20030128162650-A9	Unknown	-0.33	0.33	12.70	39.97	10.70	22.27
20030128162800-A10	Unknown	-0.33	0.33	12.70	42.23	10.93	22.27
20030128162910-A11	Unknown	-0.33	0.33	12.70	15.13	7.64	22.27
20030128163020-A12	Unknown	-0.33	0.33	12.70	21.91	8.58	22.27

A-103

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441.45#
10/10/97
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RADIOLOGICAL SURVEY REPORT

COPY

INSTRUMENTS		
Type	Serial #	Efficiency
elect	801534	10 %
		%
		%
Scaler	324920	44.28 %βγ
		29.9 %α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	<1,000 / <5,000	<20 / NA		
1-5 [illegible]			see LB 5100 printout sheet				
	1-2		inside JCV			NA	<20

CA Contamination Area
HCA High Contamination Area
RA Radiation Area
HRA High Radiation Area
VHRA Very High Radiation Area
RMA Radioactive Material Area
ARA Airborne Radioactivity Area
RBA Radiological Buffer Area
FCA Fixed Contamination Area
SCA Soil Contamination Area
URMA Underground Radioactive Material Area
SOP Step-Off Pad

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

\# General Area Dose Rate
\#@#(cm) Dose Rate at Distance From Source
*# Contact Dose Rate
\#β / #γ Beta Corrected / Gamma Dose Rates
α Alpha
β Beta
γ Gamma
n

□ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⌂ - Tritium Swipe

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RADIOLOGICAL SURVEY REPORT

BARCODE #

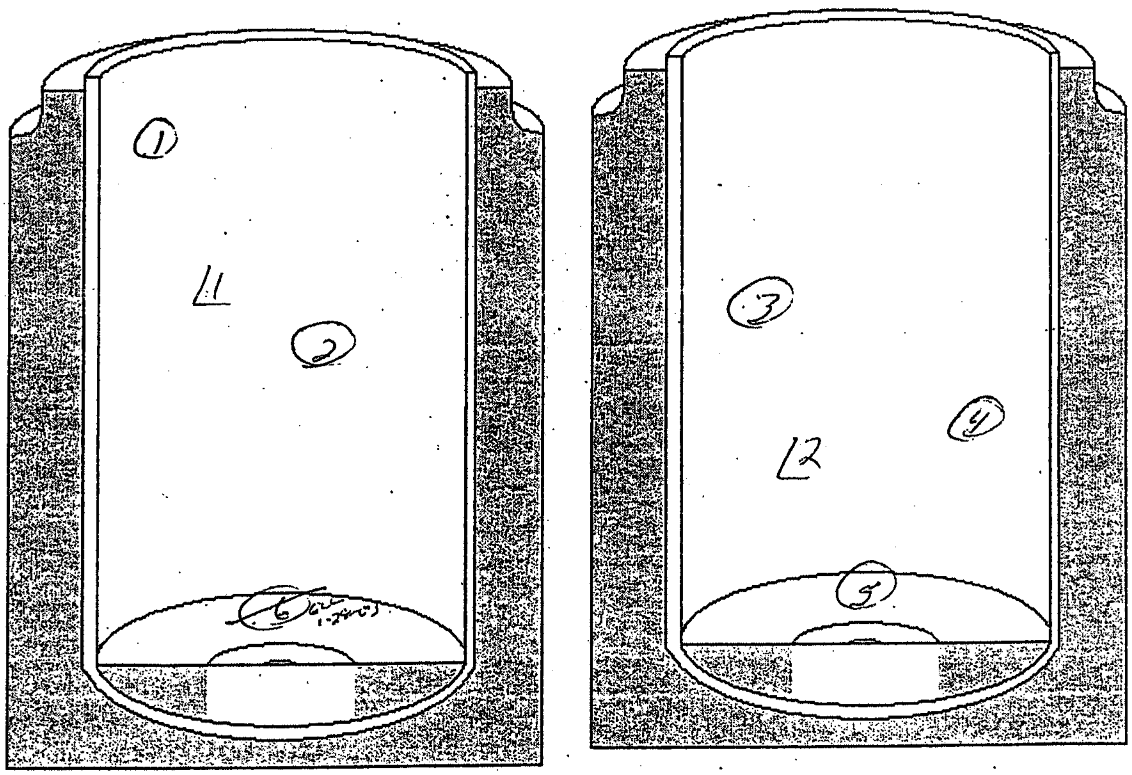
BLDG.: 607	☐ ROUTINE **JOB DESCRIPTION**
AREA/ROOM: HoTShop	☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP
RWP #: 3100 2496 07	COMMENTS: CASK #157 recovery
LOG #: 15	Report Batch # 5324
DATE: 1-28-03	
TIME: 1630	Alara TASK # 79 00 1689 0117

RCT: Fisher / L. McKinlay PRINT/SIGNATURE REVIEWED BY: [signature]

TRUPACT

Cask# 157

Survey n4 -157 -____



INSIDE OF ICV

Tan Smear Report

Batch ID:	smear - 200301281709	**Count Date:**	1/28/03
Group:	B	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,324	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	TRUPACT 157 RECOVERY- INSIDE ICV AFTER PAYLOAD REMOVED		

Background (cpm)				Efficiency (%)			
Alpha Rate:	0.10	±	0.10	**Alpha:**	29.90	±	0.23
Beta Rate:	4.30	±	0.66	**Beta:**	44.28	±	0.07

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030128170949-B7 (1)	Unknown	3.01	3.36	12.70	62.56	12.86	22.27
20030128171129-B8 (2)	Unknown	-0.33	0.33	12.70	15.13	7.64	22.27
20030128171240-B9 (3)	Unknown	-0.33	0.33	12.70	39.97	10.70	22.27
20030128171400-B10 (4)	Unknown	-0.33	0.33	12.70	26.42	9.15	22.27
20030128171510-B11 (5)	Unknown	-0.33	0.33	12.70	15.13	7.64	22.27

A-107

Reviewed by:

441.45#
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RADIOLOGICAL SURVEY REPORT

COPY

INSTRUMENTS		
Type	Serial #	Efficiency
Elect	801534	10 %
		%
		%
Scaler	324920	44.25 %βγ
		29.9 %α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	<1,000 / <5,000	<20 / NA		
1-11			See L13S100 printout sheet				
	1		Bottom of lid			NA	<20

CA	Contamination Area
HCA	High Contamination Area
RA	Radiation Area
HRA	High Radiation Area
VHRA	Very High Radiation Area
RMA	Radioactive Material Area
ARA	Airborne Radioactivity Area
RBA	Radiological Buffer Area
FCA	Fixed Contamination Area
SCA	Soil Contamination Area
URMA	Underground Radioactive Material Area
SOP	Step-Off Pad

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

#	General Area Dose Rate
#@#(cm)	Dose Rate at Distance From Source
*#	Contact Dose Rate
#β / #γ	Beta Corrected / Gamma Dose Rates
α	Alpha
β	Beta
γ	Gamma
n	N

□ - Direct Scan

○ - Swipe (Smear)

L - Large Area Wipe (LAW)

△ - Air Sample

⬠ - Tritium Swipe

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RADIOLOGICAL SURVEY REPORT

BARCODE #

BLDG.: 607	☐ ROUTINE **JOB DESCRIPTION**
AREA/ROOM: Hot Shop	☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP
RWP #: 3100 2496 02	COMMENTS: Cask #157 recovery Lid's
LOG #: 15	Report Batch #'s = 5325, 5327
DATE: 1-28-03	
TIME: 1700	Plan Task # 2900 1689 01 17

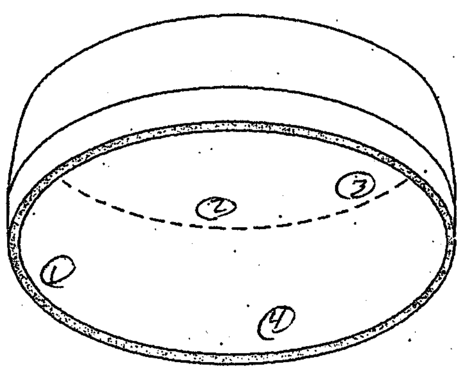
RCT: L. Bird / Lmckinlay / L McKinlay
PRINT/SIGNATURE

REVIEWED BY: [signature]

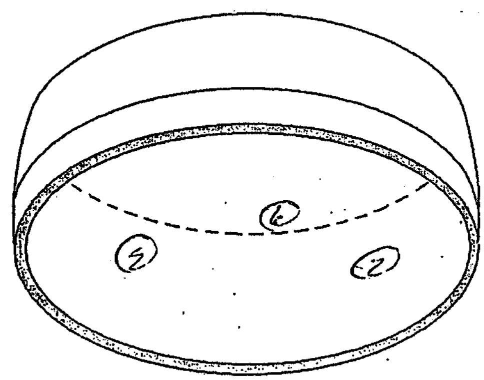
TRUPACT

Cask# 157

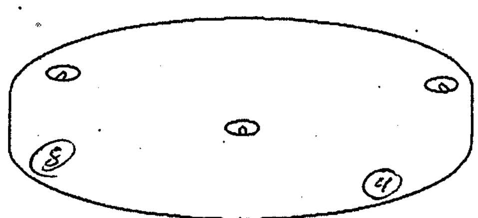
Survey NA-157



INSIDE OUTER LID RIGHT SIDE

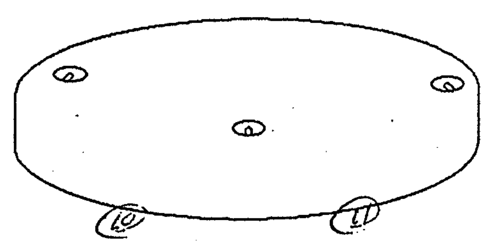


INSIDE OUTER LID LEFT SIDE



LL bottom of Lid

INNER LID RIGHT SIDE



INNER LID LEFT SIDE

Tan Smear Report

Batch ID:	smear - 200301281749	**Count Date:**	1/28/03
Group:	B	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,327	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	OCV LID		

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.10 ± 0.10		**Alpha:**	29.90 ± 0.23	
Beta Rate:	4.30 ± 0.66		**Beta:**	44.28 ± 0.07	

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030128174955-B1 (1)	Unknown	-0.33	0.33	12.70	8.36	6.56	22.27
20030128175726-B12 (2)	Unknown	9.70	5.80	12.70	39.97	10.70	22.27
20030128175836-B13 (3)	Unknown	-0.33	0.33	12.70	15.13	7.64	22.27
20030128175946-B14 (4)	Unknown	-0.33	0.33	243.70	272.59	126.26	229.97
20030128175946-B14 (5)	Unknown	3.01	3.36	12.70	130.31	17.85	22.27
20030128175946-B14 (6)	Unknown	-0.33	0.33	21.62	124.12	23.71	32.84
20030128180056-B15 (7)	Unknown	-0.33	0.33	12.70	37.71	10.45	22.27

A-111

Reviewed by: _____

Tan Smear Report

Batch ID:	smear - 200301281709	**Count Date:**	1/28/03
Group:	C	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,325	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	TRUPACT 157- INSIDE ICV LID AFTER PAYLOAD REMOVED		

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.10	± 0.10	**Alpha:**	29.90	± 0.23
Beta Rate:	4.30	± 0.66	**Beta:**	44.28	± 0.07

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030128171002-C12 (8)	Unknown	-0.33	0.33	12.70	26.42	9.15	22.27
20030128171733-C13 (9)	Unknown	-0.33	0.33	12.70	3.84	5.73	22.27
20030128171843-C14 (10)	Unknown	3.01	3.36	12.70	103.21	16.04	22.27
20030128171953-C15 (11)	Unknown	-0.33	0.33	12.70	15.13	7.64	22.27

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Reviewed by: _____

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RADIOLOGICAL SURVEY REPORT

COPY

INSTRUMENTS		
Type	Serial #	Efficiency
elect	201534	10 %
		%
		%
Scaler	324920	44.28 %βγ
		29.9 %α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	41,000 / 5,000	220 / NA		
1-6			See HB 5100 printout sheet				
1-3	1-2		inside OCA			NA	220

CA	Contamination Area
HCA	High Contamination Area
RA	Radiation Area
HRA	High Radiation Area
VHRA	Very High Radiation Area
RMA	Radioactive Material Area
ARA	Airborne Radioactivity Area
RBA	Radiological Buffer Area
FCA	Fixed Contamination Area
SCA	Soil Contamination Area
URMA	Underground Radioactive Material Area
SOP	Step-Off Pad

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

#	General Area Dose Rate
#@#(cm)	Dose Rate at Distance From Source
*#	Contact Dose Rate
#β / #γ	Beta Corrected / Gamma Dose Rates
α	Alpha
β	Beta
γ	Gamma
n	

□ - Direct Scan

○ - Swipe (Smear)

L - Large Area Wipe (LAW)

△ - Air Sample

⌂ - Tritium Swipe

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RADIOLOGICAL SURVEY REPORT

BARCODE #

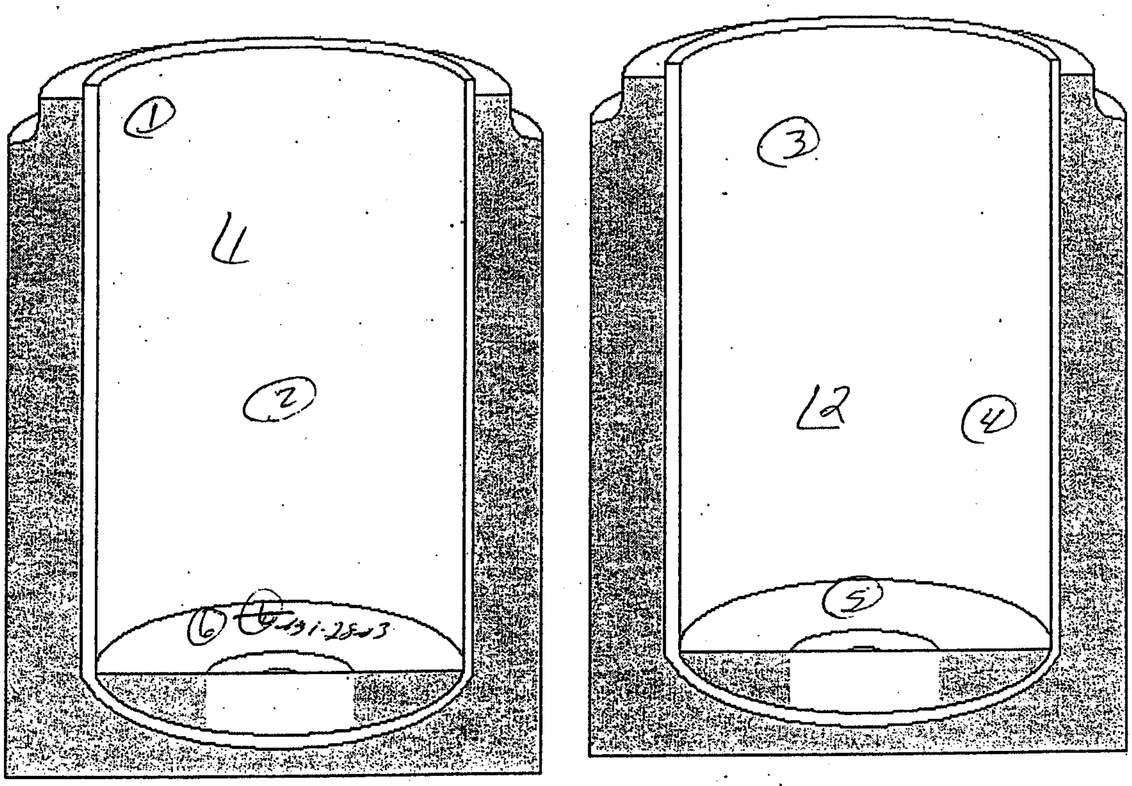
BLDG.: 607	☐ ROUTINE **JOB DESCRIPTION**
AREA/ROOM: Hot Shop	☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP
RWP #: 31002496 02	COMMENTS: CASK #157 recovery
LOG #: 15	Batch Report # 5323
DATE: 1-28-03	
TIME: 1730	Alara TASK # 29001689 01 17

RCT: L. McKinlay PRINT/SIGNATURE REVIEWED BY: [signature]

TRUPACT

Cask# 157

Survey NA-157-



INSIDE OF OCA

Tan Smear Report

Batch ID:	smear - 200301281658	**Count Date:**	1/28/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,323	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	TRUPACT 157- INSIDE OF OCA		

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.10 ± 0.10		**Alpha:**	29.90 ± 0.23	
Beta Rate:	4.30 ± 0.66		**Beta:**	44.28 ± 0.07	

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030128165820-A1	Unknown	-0.33	0.33	12.70	8.36	6.56	22.27
20030128165950-A2	Unknown	-0.33	0.33	12.70	6.10	6.16	22.27
20030128170100-A3	Unknown	-0.33	0.33	12.70	12.87	7.29	22.27
20030128170210-A4	Unknown	-0.33	0.33	12.70	-0.68	4.75	22.27
20030128170320-A5	Unknown	-0.33	0.33	12.70	21.91	8.58	22.27
20030128170430-A6	Unknown	-0.33	0.33	12.70	51.27	11.83	22.27

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Reviewed by: _____

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RADIOLOGICAL SURVEY REPORT

BARCODE #

BLDG.: HOT SHOP/EXTENSION
AREA/ROOM: TRUPACT FLOOR PLAN
RWP #: 31002496
LOG #: 2
DATE: 1-29-03
TIME: 0750

☐ ROUTINE **JOB DESCRIPTION**
☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP

COMMENTS: ~~General Area Dose Rate measured at waist level~~ GS 1-31-03
To Release AREA from CA to RBA.

RCT: Jon Johnston / [signature]
PRINT/SIGNATURE

REVIEWED BY: [signature]

INSTRUMENTS		
Type	Serial #	Efficiency
177-L	801973	10 %
		%
		%
Scaler	225015	40 %βγ
		24 %α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		

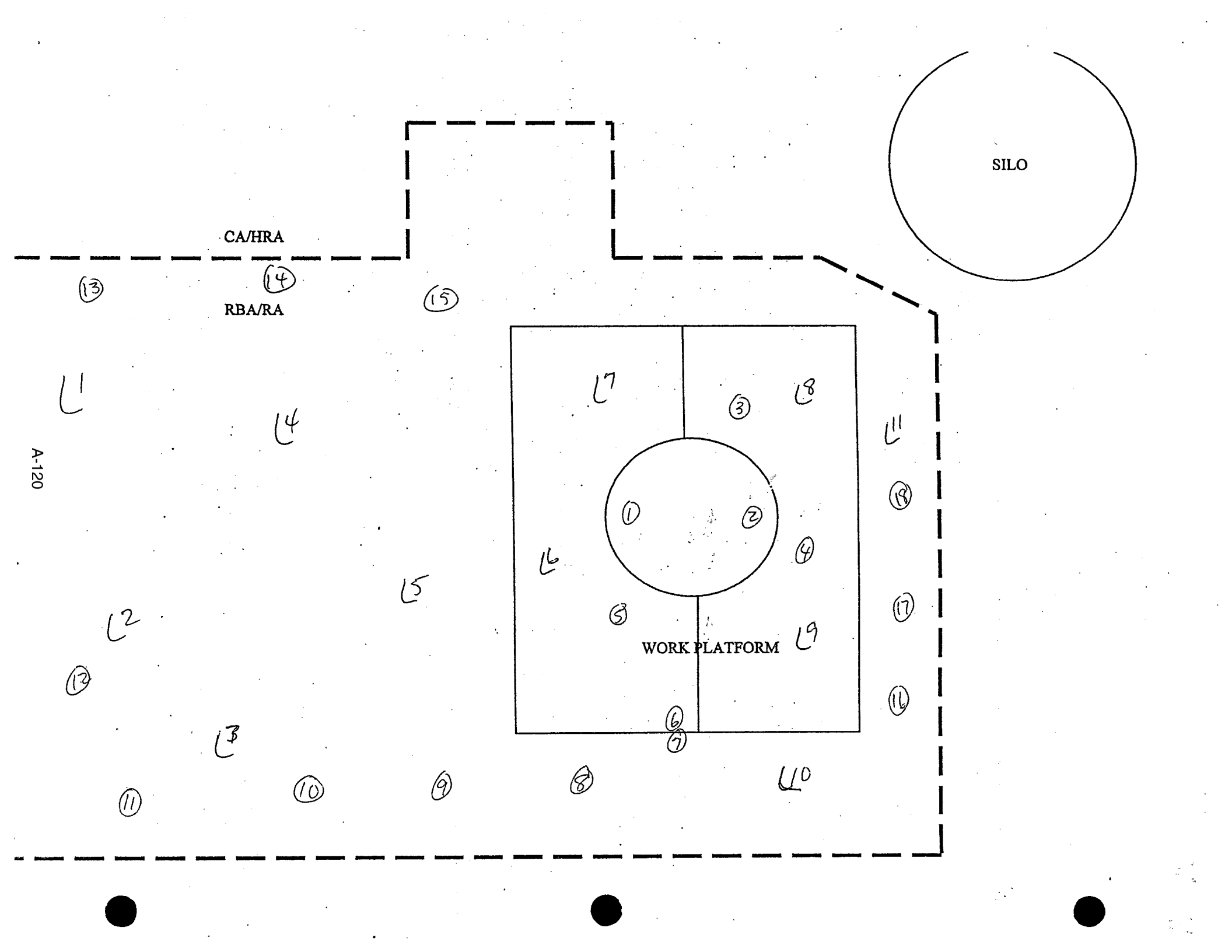
CA Contamination Area
HCA High Contamination Area
RA Radiation Area
HRA High Radiation Area
VHRA Very High Radiation Area
RMA Radioactive Material Area
ARA Airborne Radioactivity Area
RBA Radiological Buffer Area
FCA Fixed Contamination Area

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

General Area Dose Rate
#@#(cm) Dose Rate at Distance From Source
*# ose Rate
#β / #γ A-119 cted / Gamma Dose Rates
α Alpha

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⌒ - Tritium Swipe


SILO
CA/HRA
RBA/RA
A-120
WORK PLATFORM

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RADIOLOGICAL SURVEY REPORT

COPY

INSTRUMENTS		
Type	Serial #	Efficiency
		%
		%
		%
Scaler	324820	44.2 %βγ
		28.9 %α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	10001 NA	201 NA		
			See printout and map				

CA Contamination Area
HCA High Contamination Area
RA Radiation Area
HRA High Radiation Area
VHRA Very High Radiation Area
RMA Radioactive Material Area
ARA Airborne Radioactivity Area
RBA Radiological Buffer Area
FCA Fixed Contamination Area
SCA Soil Contamination Area
URMA Underground Radioactive Material Area
SOP Step-Off Pad

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

General Area Dose Rate
#@#(cm) Dose Rate at Distance From Source
*# Contact Dose Rate
#β / #γ Beta Corrected / Gamma Dose Rates
α Alpha
β Beta
γ Gamma
n

□ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⌂ - Tritium Swipe

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RADIOLOGICAL SURVEY REPORT

BARCODE #

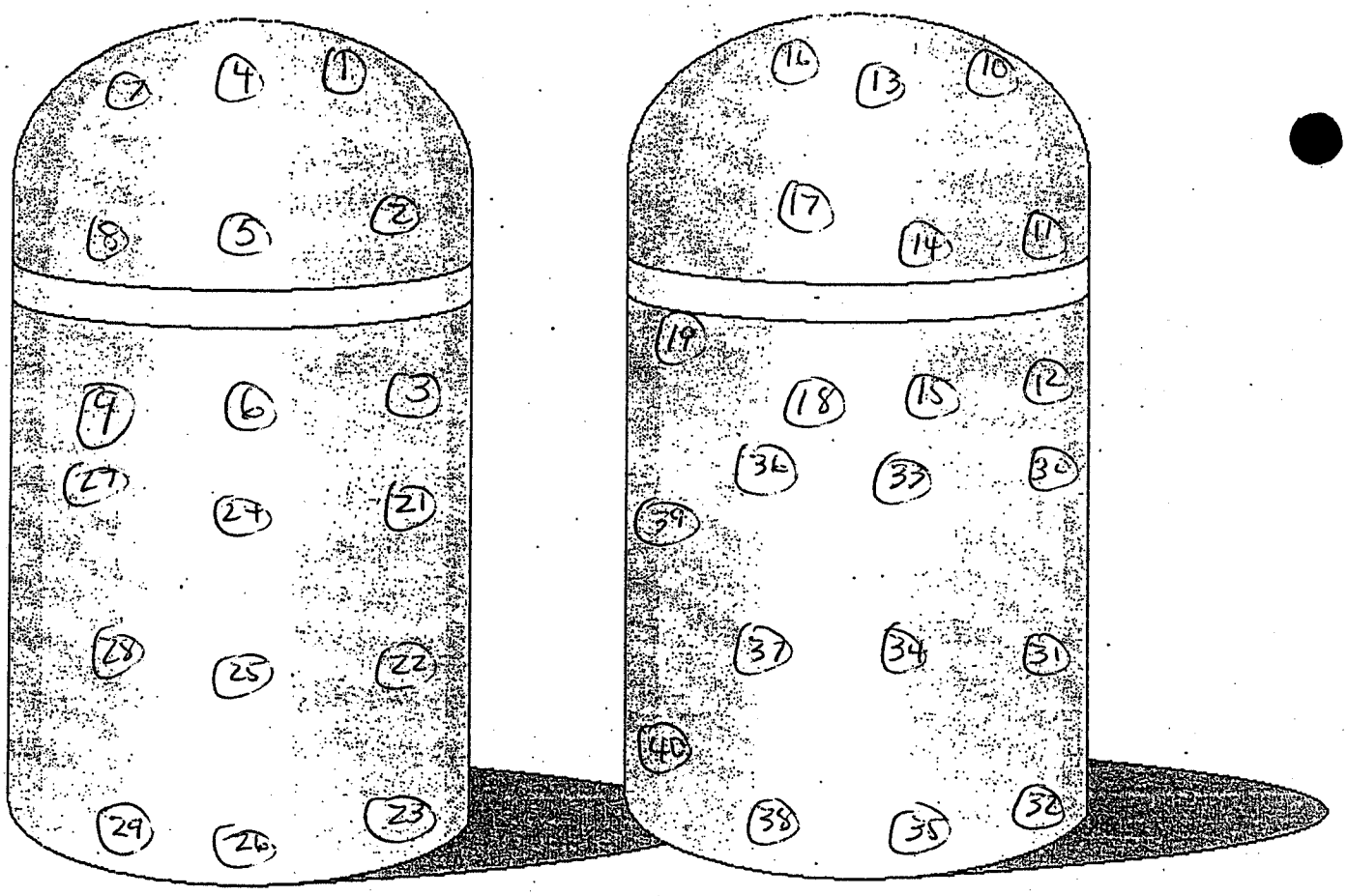
BLDG.: TAN 607
AREA/ROOM: Hot Shop Extension
RWP #: 31005496 02
LOG #: 4
DATE: 1/29/03
TIME: 1245

☐ ROUTINE **JOB DESCRIPTION**
☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP
COMMENTS: TRUPACT 157 Recovery Project. Smear Survey TO release from Hot Shop with Payload Removed.
Report Book # 5331

RCT: F. Bush / F Bush
PRINT/SIGNATURE

REVIEWED BY:

TRUPACT CONTAINER (OCA)



Tan Smear Report

Batch ID:	smear - 200301291031	**Count Date:**	1/29/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,331	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	TRUPACT 157 RECOVERY, UPPER PORTION OF CASK AS IT LEFT HOT SHOP		

COPY

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.00 ± 0.00		**Alpha:**	29.90 ± 0.23	
Beta Rate:	4.30 ± 0.66		**Beta:**	44.28 ± 0.07	

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030129103157-A1	Unknown	0.00	0.00	9.05	10.61	6.94	22.27
20030129103328-A2	Unknown	0.00	0.00	9.05	6.10	6.16	22.27
20030129103438-A3	Unknown	0.00	0.00	9.05	1.58	5.26	22.27
20030129103548-A4	Unknown	0.00	0.00	9.05	-5.19	3.52	22.27
20030129103658-A5	Unknown	0.00	0.00	9.05	24.16	8.87	22.27
20030129103808-A6	Unknown	0.00	0.00	9.05	44.49	11.16	22.27
20030129103928-A7	Unknown	3.34	3.34	9.05	73.85	13.82	22.27
20030129104038-A8	Unknown	0.00	0.00	9.05	37.71	10.45	22.27
20030129104148-A9	Unknown	0.00	0.00	9.05	10.61	6.94	22.27
20030129104258-A10	Unknown	3.34	3.34	9.05	42.23	10.93	22.27
20030129104408-A11	Unknown	0.00	0.00	9.05	30.94	9.70	22.27
20030129104518-A12	Unknown	0.00	0.00	9.05	30.94	9.70	22.27
20030129104628-A13	Unknown	0.00	0.00	9.05	8.36	6.56	22.27
20030129104739-A14	Unknown	0.00	0.00	9.05	121.27	17.26	22.27
20030129104859-A15	Unknown	0.00	0.00	9.05	17.39	7.96	22.27
20030129105009-A16	Unknown	0.00	0.00	9.05	35.46	10.21	22.27
20030129105119-A17	Unknown	0.00	0.00	9.05	44.49	11.16	22.27
20030129105229-A18	Unknown	0.00	0.00	9.05	26.42	9.15	22.27
20030129105339-A19	Unknown	0.00	0.00	9.05	26.42	9.15	22.27

Tan Smear Report

Batch ID:	smear - 200301291035	**Count Date:**	1/29/03
Group:	B	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,332	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	TRUPACT 157 RECOVERY-LOWER PORTION OF CASK AS IT LEFT THE HOT SHOP		

COPY

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.00 ± 0.00		**Alpha:**	29.90 ± 0.23	
Beta Rate:	4.30 ± 0.66		**Beta:**	44.28 ± 0.07	

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030129103553-B21	Unknown	0.00	0.00	9.05	35.46	10.21	22.27
20030129105604-B22	Unknown	0.00	0.00	9.05	71.59	13.63	22.27
20030129105714-B23	Unknown	0.00	0.00	9.05	19.65	8.28	22.27
20030129105824-B24	Unknown	0.00	0.00	9.05	53.52	12.04	22.27
20030129105944-B25	Unknown	3.34	3.34	9.05	6.10	6.16	22.27
20030129110054-B26	Unknown	0.00	0.00	9.05	39.97	10.70	22.27
20030129110204-B27	Unknown	0.00	0.00	9.05	39.97	10.70	22.27
20030129110314-B28	Unknown	0.00	0.00	9.05	30.94	9.70	22.27
20030129110425-B29	Unknown	0.00	0.00	9.05	51.27	11.83	22.27
20030129110535-B30	Unknown	0.00	0.00	9.05	44.49	11.16	22.27
20030129110645-B31	Unknown	0.00	0.00	9.05	-7.45	2.70	22.27
20030129110755-B32	Unknown	0.00	0.00	9.05	17.39	7.96	22.27
20030129110915-B33	Unknown	6.69	4.73	9.05	33.20	9.95	22.27
20030129111025-B34	Unknown	0.00	0.00	9.05	33.20	9.95	22.27
20030129111135-B35	Unknown	6.69	4.73	9.05	1.58	5.26	22.27
20030129111245-B36	Unknown	0.00	0.00	9.05	30.94	9.70	22.27
20030129111355-B37	Unknown	0.00	0.00	9.05	37.71	10.45	22.27
20030129111505-B38	Unknown	0.00	0.00	9.05	3.84	5.73	22.27
20030129111615-B39	Unknown	0.00	0.00	9.05	21.91	8.58	22.27
20030129111735-B40	Unknown	0.00	0.00	9.05	10.61	6.94	22.27

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RADIOLOGICAL SURVEY REPORT

COPY

Pg 1 of 2

BARCODE #

BLDG.: TAN Hot Shop
AREA/ROOM: Trupact Tent
RWP #: 3100 2510 02
LOG #: 10
DATE: 1-29-03
TIME: 1630

☐ ROUTINE
☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP

JOB DESCRIPTION

COMMENTS: General Area Dose Rate measured at waist level
Surveys taken during payload disassembly
Report Batch # 5337

RCT: J. Ely / J. Ely / [illegible] / L. McKinney
PRINT/SIGNATURE

Jon Johnston

REVIEWED BY:

INSTRUMENTS		
Type	Serial #	Efficiency
ZA	800147	10 %
		%
		%
Scaler	324915 See LB 5100	44.23 attachment %βγ
		29.90 %α
RO-20	801780	

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		
1-12			See LB 5100 attachment for survey results			~~<1000~~	~~<20~~
	1					<1000	<20

CA	Contamination Area
HCA	High Contamination Area
RA	Radiation Area
HRA	High Radiation Area
VHRA	Very High Radiation Area
RMA	Radioactive Material Area
ARA	Airborne Radioactivity Area
RBA	Radiological Buffer Area
FCA	Fixed Contamination Area
SCA	Soil Contamination Area
URMA	Underground Radioactive Material Area
SOP	Step-Off Pad

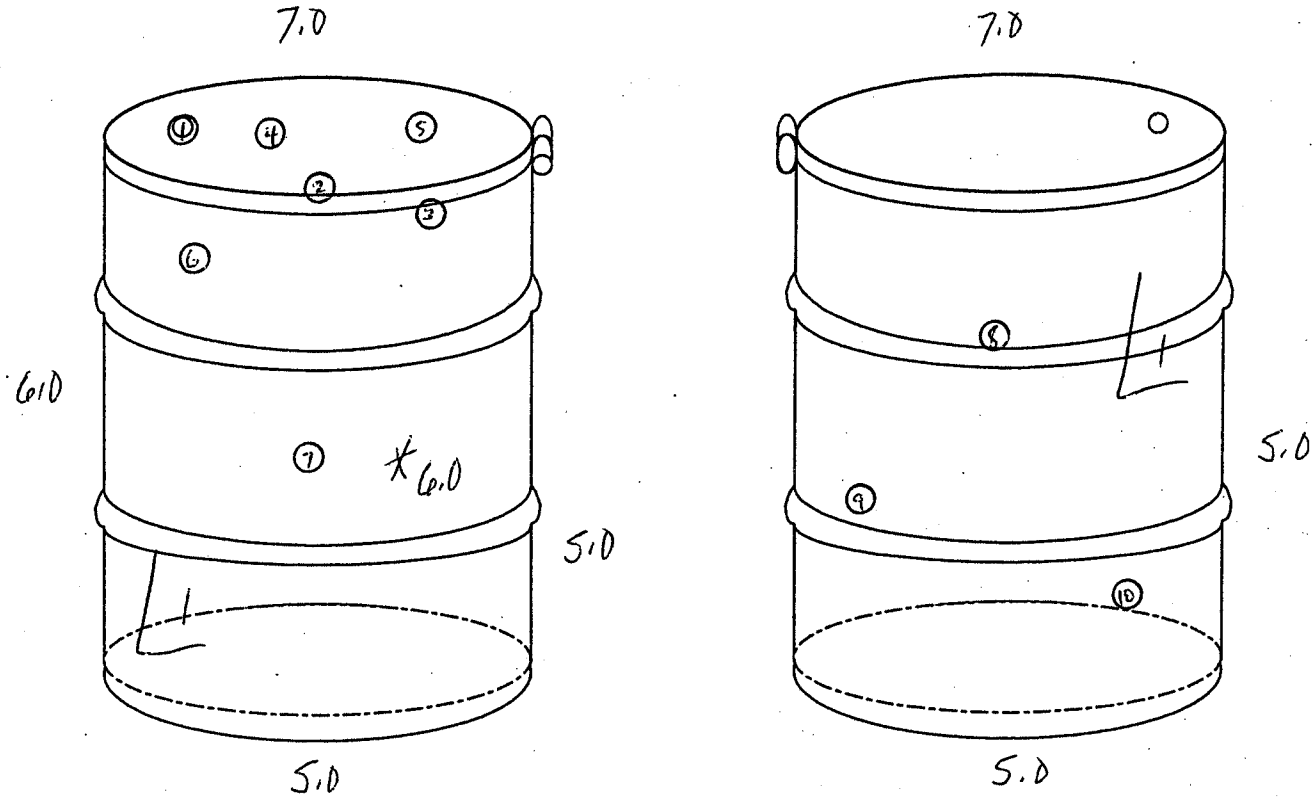
-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

#	General Area Dose Rate
#@#(cm)	Dose Rate at Distance From Source
*#	Contact Dose Rate
#β / #γ	Beta Corrected / Gamma Dose Rates
α	Alpha
β	
γ	
n	

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⌂ - Tritium Swipe

Drum # 1



Bottom

Tan Smear Report

Batch ID:	smear - 200301291806	**Count Date:**	1/29/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,337	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	TRUPACT 157. DRUM POSITION #1. #11 & #12 ARE CLOTH SMEARS ON BOTTOM OF DRUM		

Background (cpm)				Efficiency (%)			
Alpha Rate:	0.00	±	0.00	**Alpha:**	29.90	±	0.23
Beta Rate:	4.30	±	0.66	**Beta:**	44.28	±	0.07

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030129180638-A1	Unknown	3.34	3.34	9.05	15.13	7.64	22.27
20030129180808-A2	Unknown	3.34	3.34	9.05	33.20	9.95	22.27
20030129180918-A3	Unknown	10.03	5.79	9.05	8.36	6.56	22.27
20030129181028-A4	Unknown	6.69	4.73	9.05	-0.68	4.75	22.27
20030129181138-A5	Unknown	0.00	0.00	9.05	28.68	9.43	22.27
20030129181248-A6	Unknown	13.38	6.69	9.05	44.49	11.16	22.27
20030129181408-A7	Unknown	0.00	0.00	9.05	69.33	13.44	22.27
20030129181519-A8	Unknown	3.34	3.34	9.05	33.20	9.95	22.27
20030129181629-A9	Unknown	0.00	0.00	9.05	26.42	9.15	22.27
20030129181739-A10	Unknown	3.34	3.34	9.05	24.16	8.87	22.27
20030129181849-A11	Unknown	0.00	0.00	9.05	69.33	13.44	22.27
20030129181959-A12	Unknown	0.00	0.00	9.05	116.76	16.97	22.27

Reviewed by: _____

441.45#
10/10/97
Rev. #03

RADIOLOGICAL SURVEY REPORT

COPY

Pg 1 of 2

BARCODE #

BLDG.: TAN Hot Shop
AREA/ROOM: Trupact Tent
RWP #: 31002510 02
LOG #: 10
DATE: 1-29-03
TIME: 1630

☐ ROUTINE **JOB DESCRIPTION**
☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP
COMMENTS: General Area Dose Rate measured at waist level
Survey taken during payload ~~assembly~~ disassembly
Report Batch # 5333

RCT: J.Ely / J.Ely / [illegible] / L McKinley
PRINT/SIGNATURE
Jon Johnston / [signature]

REVIEWED BY: [signature]

INSTRUMENTS		
Type	Serial #	Efficiency
2A	800147	10 %
		%
		%
Scaler	~~See LB5100~~ 324928	~~attachment~~ 44.23 %βγ
		29.98 %α
RO-20	801780	
electra	801530	10% α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²) βγ	SWIPE/SCAN (dpm/100cm²) α	LAW (dpm) βγ	LAW (dpm) α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		
1-12			See LB5100 attachment for survey results			~~<1000~~	~~<20~~
	1					<1000	<20

CA Contamination Area
HCA High Contamination Area
RA Radiation Area
HRA High Radiation Area
VHRA Very High Radiation Area
RMA Radioactive Material Area
ARA Airborne Radioactivity Area
RBA Radiological Buffer Area
FCA Fixed Contamination Area
SCA Soil Contamination Area

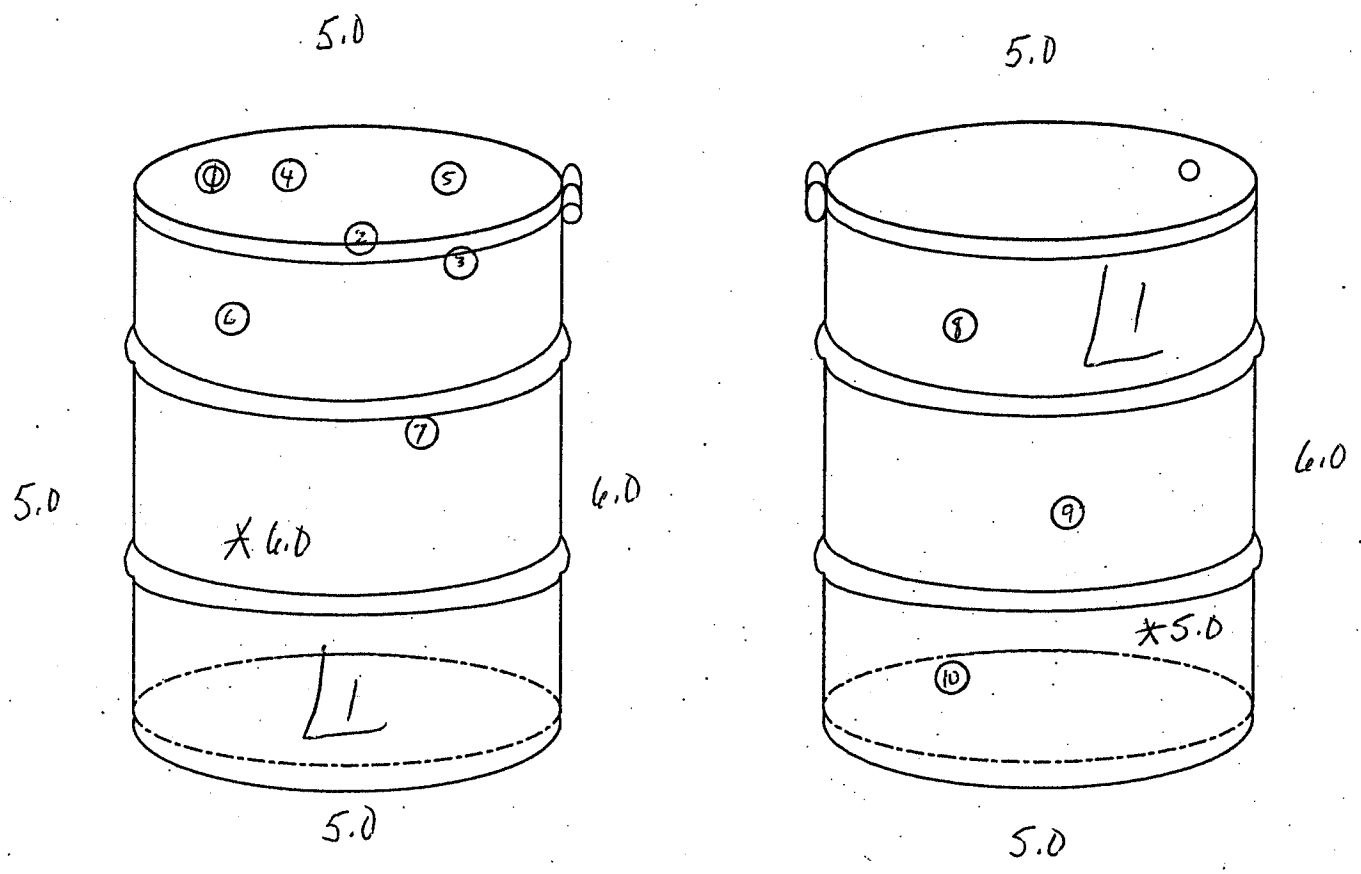
-x—x- Radiological Barrier

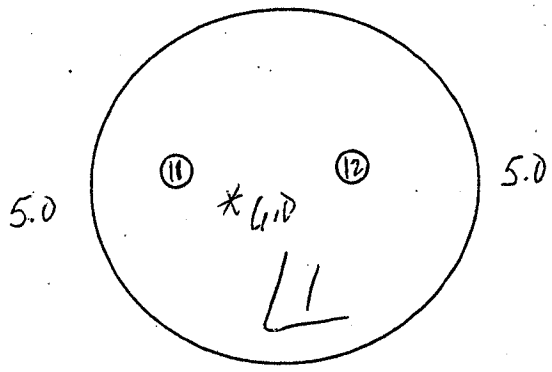
ALL dose rates are in mrem/hr, unless otherwise noted.

General Area Dose Rate
#@#(cm) Dose Rate at Distance From Source
*# Contact Dose Rate
#β / #γ Beta Corrected / Gamma Dose Rates
α
β

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⌂ - Tritium Swipe

Drum # 2





Bottom

Tan Smear Report

Pg 2 of 2

Batch ID:	smear - 200301291621	**Count Date:**	1/29/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,333	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	TRUPACT 157- DRUM #2 SMEARS. 11 & 12 ARE CLOTH SMEARS ON DRUM BOTTOM		

COPY

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.00 ± 0.00		**Alpha:**	29.90 ± 0.23	
Beta Rate:	4.30 ± 0.66		**Beta:**	44.28 ± 0.07	

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030129162139-A1	Unknown	0.00	0.00	9.05	103.21	16.04	22.27
20030129162309-A2	Unknown	0.00	0.00	9.05	6.10	6.16	22.27
20030129162419-A3	Unknown	0.00	0.00	9.05	15.13	7.64	22.27
20030129162529-A4	Unknown	3.34	3.34	9.05	1.58	5.26	22.27
20030129162639-A5	Unknown	0.00	0.00	9.05	21.91	8.58	22.27
20030129162749-A6	Unknown	0.00	0.00	9.05	28.68	9.43	22.27
20030129162909-A7	Unknown	0.00	0.00	9.05	73.85	13.82	22.27
20030129163019-A8	Unknown	0.00	0.00	9.05	21.91	8.58	22.27
20030129163129-A9	Unknown	3.34	3.34	9.05	24.16	8.87	22.27
20030129163240-A10	Unknown	3.34	3.34	9.05	26.42	9.15	22.27
20030129163350-A11	Unknown	3.34	3.34	9.05	100.95	15.88	22.27
20030129163500-A12	Unknown	10.03	5.79	9.05	94.17	15.39	22.27

Reviewed by: _____

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10/10/97
Rev. #03

RADIOLOGICAL SURVEY REPORT

COPY

Pg 1 of 2

BARCODE #

BLDG.: TAN Hot Shop
AREA/ROOM: Trupact Tent
RWP #: 31002510 02
LOG #: 10
DATE: 1-29-03
TIME: 1630

JOB DESCRIPTION

☐ ROUTINE
☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP
COMMENTS: General Area Dose Rate measured at waist level
Surveys taken during payload disassembly
Report Batch # 5335

RCT: J. Ely / J. Ely / [illegible] / [illegible] / L. McKinney
PRINT/SIGNATURE
Jon Johnston / [signature]

REVIEWED BY: [signature]

INSTRUMENTS		
Type	Serial #	Efficiency
2A	800147	10 %
Electra	801930	10 %
		%
Scaler	~~324920~~ See LB5100	~~44.28~~ attachment %βγ
		29.90 %α
RO-20	801780	

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²) βγ	SWIPE/SCAN (dpm/100cm²) α	LAW (dpm) βγ	LAW (dpm) α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		
1-12			See LB5100 attachment for survey results			~~<1000~~	~~<20~~
	1					<1000	<20

CA	Contamination Area
HCA	High Contamination Area
RA	Radiation Area
HRA	High Radiation Area
VHRA	Very High Radiation Area
RMA	Radioactive Material Area
ARA	Airborne Radioactivity Area
RBA	Radiological Buffer Area
FCA	Fixed Contamination Area
SCA	Soil Contamination Area

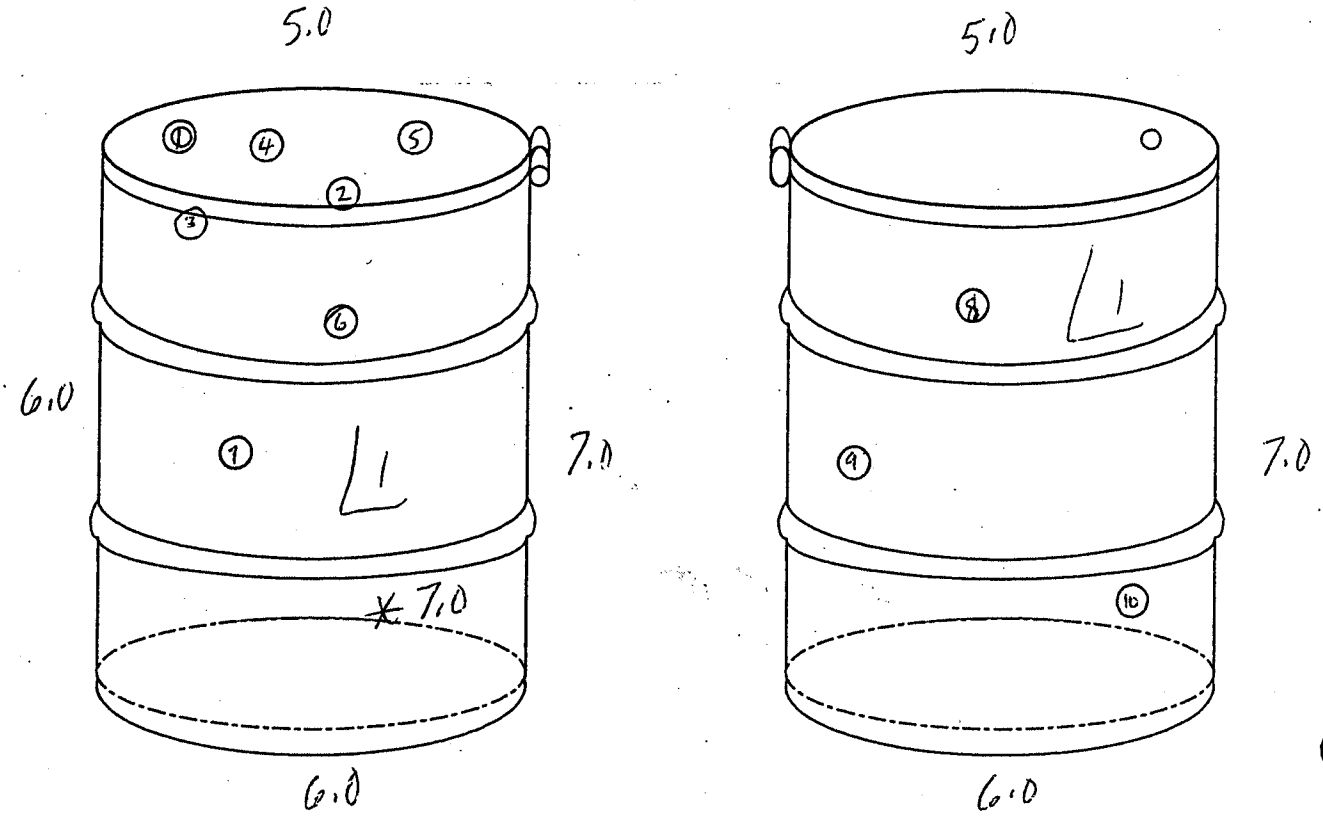
-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

#	General Area Dose Rate
#@#(cm)	Dose Rate at Distance From Source
*#	Contact Dose Rate
#β / #γ	Beta Corrected / Gamma Dose Rates
α	
β	

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⬠ - Tritium Swipe

Drum # 3



Bottom

Tan Smear Report

Pg 2 of 2

Batch ID:	smear - 200301291704	**Count Date:**	1/29/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,335	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	TRUPACT 157. DRUM POSITION #3		

COPY

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.00 ± 0.00		**Alpha:**	29.90 ± 0.23	
Beta Rate:	4.30 ± 0.66		**Beta:**	44.28 ± 0.07	

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030129170434-A1	Unknown	0.00	0.00	9.05	39.97	10.70	22.27
20030129170604-A2	Unknown	6.69	4.73	9.05	12.87	7.29	22.27
20030129170714-A3	Unknown	0.00	0.00	9.05	8.36	6.56	22.27
20030129170824-A4	Unknown	0.00	0.00	9.05	19.65	8.28	22.27
20030129170934-A5	Unknown	3.34	3.34	9.05	12.87	7.29	22.27
20030129171045-A6	Unknown	3.34	3.34	9.05	33.20	9.95	22.27
20030129171155-A7	Unknown	0.00	0.00	9.05	96.43	15.55	22.27
20030129171315-A8	Unknown	3.34	3.34	9.05	37.71	10.45	22.27
20030129171425-A9	Unknown	0.00	0.00	9.05	28.68	9.43	22.27
20030129171535-A10	Unknown	0.00	0.00	9.05	26.42	9.15	22.27
20030129171645-A11	Unknown	3.34	3.34	9.05	191.28	21.36	22.27
20030129171755-A12	Unknown	3.34	3.34	9.05	121.27	17.26	22.27

Reviewed by: _____

441.45#
10/10/97
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RADIOLOGICAL SURVEY REPORT

COPY

Pg 1 of 2

BARCODE #

BLDG.: TAN Hot Shop	☐ ROUTINE **JOB DESCRIPTION**
AREA/ROOM: TruPact Tent	☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP
RWP #: 3100 2510 02	COMMENTS: General Area Dose Rate measured at waist level
LOG #: 10	Survey taken during payload disassembly
DATE: 1-29-03	Report/Batch # 5336
TIME: 1630	

RCT: J. Ely / J. Ely / [illegible] / L. McKinney PRINT/SIGNATURE REVIEWED BY: [signature]

Jon Johnston / [signature]

INSTRUMENTS		
Type	Serial #	Efficiency
2A	800147	10 %
		%
	~~324920~~	~~44.28~~ %
Scaler	See LB5100	attachment %βγ
		29.90 %α
RO-20	801780	
electra	801430	

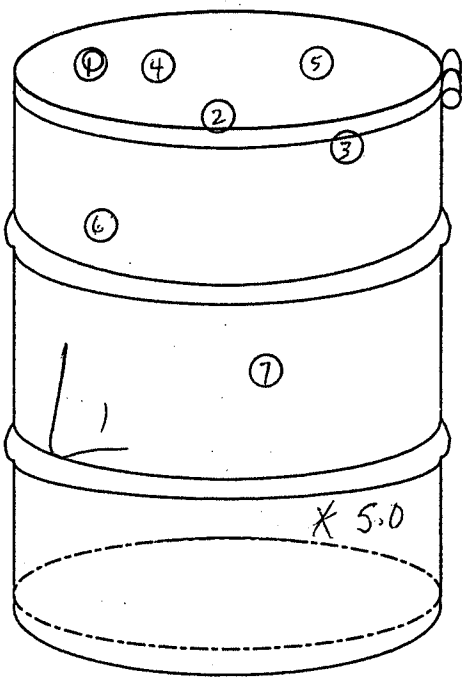
SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN ($dpm/100cm^2$) βγ	SWIPE/SCAN ($dpm/100cm^2$) α	LAW (dpm) βγ	LAW (dpm) α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		
1-12			See LB5100 attachment for survey results			~~<1000~~	~~<20~~
	1					<1000	<20

CA	Contamination Area	-x—x-	Radiological Barrier	☐ - Direct Scan
HCA	High Contamination Area			○ - Swipe (Smear)
RA	Radiation Area		ALL dose rates are in mrem/hr, unless otherwise noted.	L - Large Area Wipe (LAW)
HRA	High Radiation Area			△ - Air Sample
VHRA	Very High Radiation Area	#	General Area Dose Rate	⌂ - Tritium Swipe
RMA	Radioactive Material Area	#@#(cm)	Dose Rate at Distance From Source	
ARA	Airborne Radioactivity Area	*#	Contact Dose Rate	
RBA	Radiological Buffer Area	#β / #γ	Beta Corrected / Gamma Dose Rates	
FCA	Fixed Contamination Area	α	Alpha	
SCA	Soil Contamination Area	β	B	
URMA	Underground Radioactive Material Area	γ	G	
SOP	Step-Off Pad	n	Neutron	

Drum # 4



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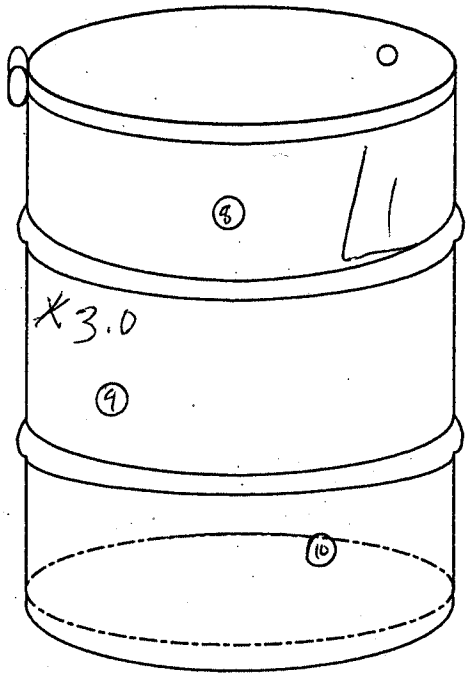

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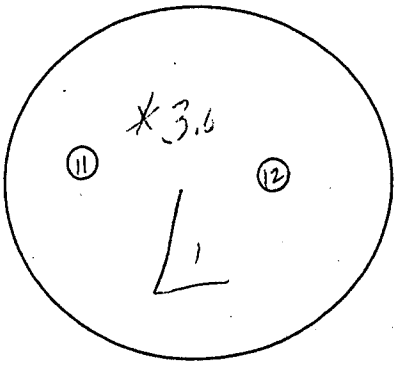

Bottom

Tan Smear Report

Pg 2 of 2

Batch ID:	smear - 200301291735	**Count Date:**	1/29/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,336	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	TRUPACT 157. DRUM POSITION #4. SMEARS 11 & 12 ARE CLOTH SMEARS ON DRUM BOTTOM		

COPY

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.00 ± 0.00		**Alpha:**	29.90 ± 0.23	
Beta Rate:	4.30 ± 0.66		**Beta:**	44.28 ± 0.07	

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030129173511-A1	Unknown	3.34	3.34	9.05	8.36	6.56	22.27
20030129173641-A2	Unknown	0.00	0.00	9.05	6.10	6.16	22.27
20030129173751-A3	Unknown	0.00	0.00	9.05	24.16	8.87	22.27
20030129173902-A4	Unknown	0.00	0.00	9.05	1.58	5.26	22.27
20030129174012-A5	Unknown	6.69	4.73	9.05	19.65	8.28	22.27
20030129174122-A6	Unknown	0.00	0.00	9.05	21.91	8.58	22.27
20030129174242-A7	Unknown	0.00	0.00	9.05	62.56	12.86	22.27
20030129174352-A8	Unknown	3.34	3.34	9.05	39.97	10.70	22.27
20030129174502-A9	Unknown	3.34	3.34	9.05	60.30	12.66	22.27
20030129174612-A10	Unknown	3.34	3.34	9.05	24.16	8.87	22.27
20030129174722-A11	Unknown	0.00	0.00	9.05	73.85	13.82	22.27
20030129174832-A12	Unknown	0.00	0.00	9.05	182.25	20.88	22.27

Reviewed by: _____

441.45#
10/10/97
Rev. #03

RADIOLOGICAL SURVEY REPORT

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BARCODE #

BLDG.: TAN 607 Hot Shop
AREA/ROOM: Trupact Tent
RWP #: 31002510 02
LOG #: 10
DATE: 1/29/03
TIME: 1430 - 1800

☐ ROUTINE **JOB DESCRIPTION**
☑ NON ROUTINE (SPECIFY) ☐ FOLLOW UP
COMMENTS: ~~General Area Dose Rate measured at waist level~~ GDC 1-31-03
Special contamination surveys taken during and after ~~disassembly~~ disassembly phase of TRUPACT drums

RCT: Jon Johnston / PRINT/SIGNATURE REVIEWED BY:

INSTRUMENTS		
Type	Serial #	Efficiency
ZA	800147	10 %
		%
		%
Scaler	225015	40 %βγ
		24 %α
Electra	801530	10 %α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		
	L1 - L6					<1000	<20

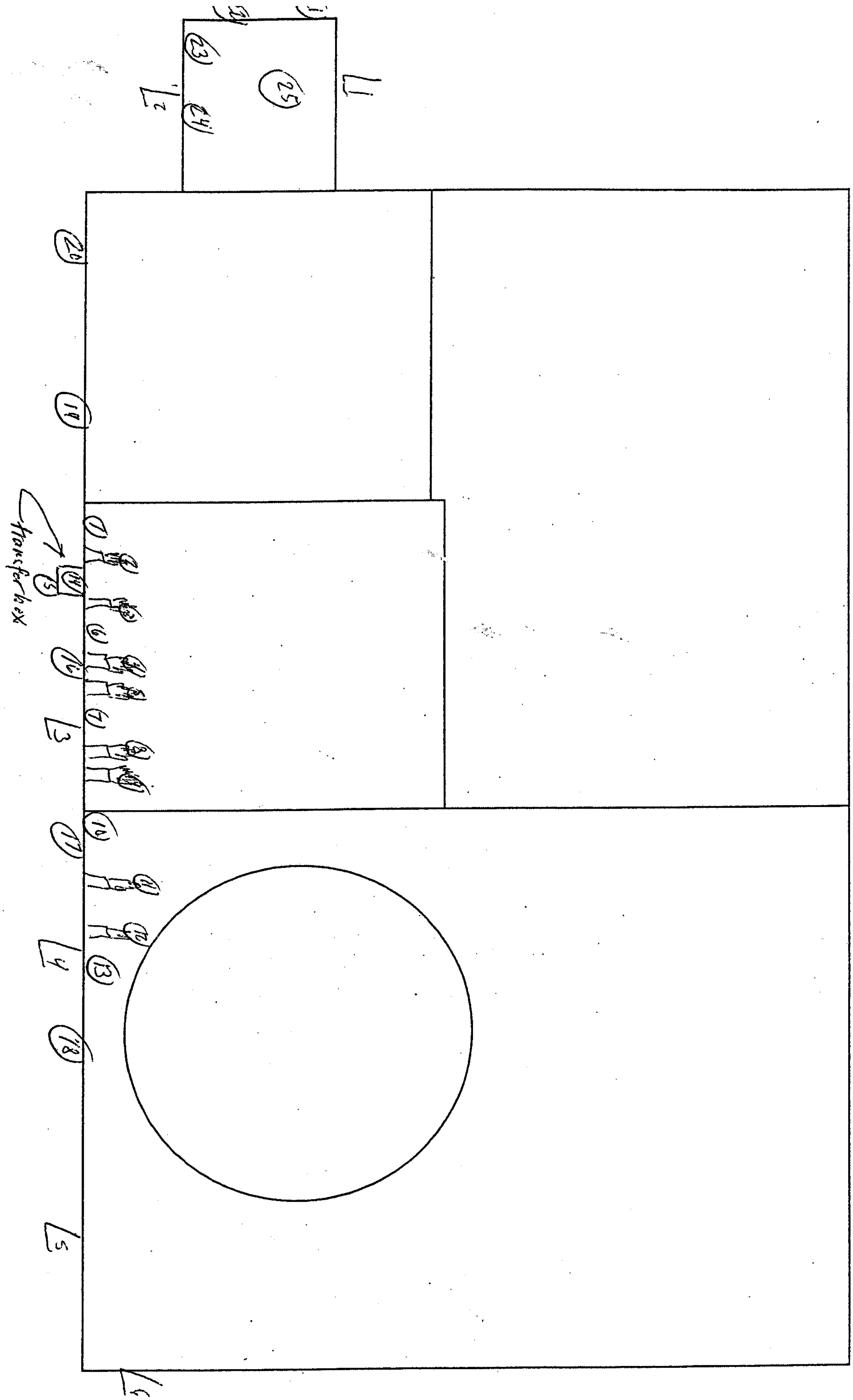
CA Contamination Area
HCA High Contamination Area
RA Radiation Area
HRA High Radiation Area
VHRA Very High Radiation Area
RMA Radioactive Material Area
ARA Airborne Radioactivity Area
RBA Radiological Buffer Area
FCA Fixed Contamination Area
SCA Soil Contamination Area
URMA Underground Radioactive Material Area

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

\# General Area Dose Rate
#@#(cm) Dose Rate at Distance From Source
*# Contact Dose Rate
#β / #γ Beta Corrected / Gamma Dose Rates
α A
β B A-143
γ Gamma

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⬠ - Tritium Swipe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441.45#
10/10/97
Rev. #03

Pg. 1 of 2

RADIOLOGICAL SURVEY REPORT COPY

BARCODE #

BLDG.: TAN 607 Hot Shop	☐ ROUTINE **JOB DESCRIPTION**
AREA/ROOM: Trupact tent	☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP
RWP #: 31002510	COMMENTS: General Area Dose Rate measured at waist level
LOG #: 10	Smear survey to verify levels outside work area of trupact tent for RWP #
DATE: 1/29/03	31002510, Dose rates are General Area Working Fields with
TIME: 1830	No Drums in tent. Report BcTaC # 5358

RCT: Jon Johnston/ [signature]
PRINT/SIGNATURE

REVIEWED BY: [signature]

INSTRUMENTS		
Type	Serial #	Efficiency
		%
		%
	324920	44.2%
Scaler	See LB5100 Print	%βγ
		29.9%α
RO-20	801780	

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN ($dpm/100cm^2$)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		

CA	Contamination Area
HCA	High Contamination Area
RA	Radiation Area
HRA	High Radiation Area
VHRA	Very High Radiation Area
RMA	Radioactive Material Area
ARA	Airborne Radioactivity Area
RBA	Radiological Buffer Area
FCA	Fixed Contamination Area
SCA	Soil Contamination Area

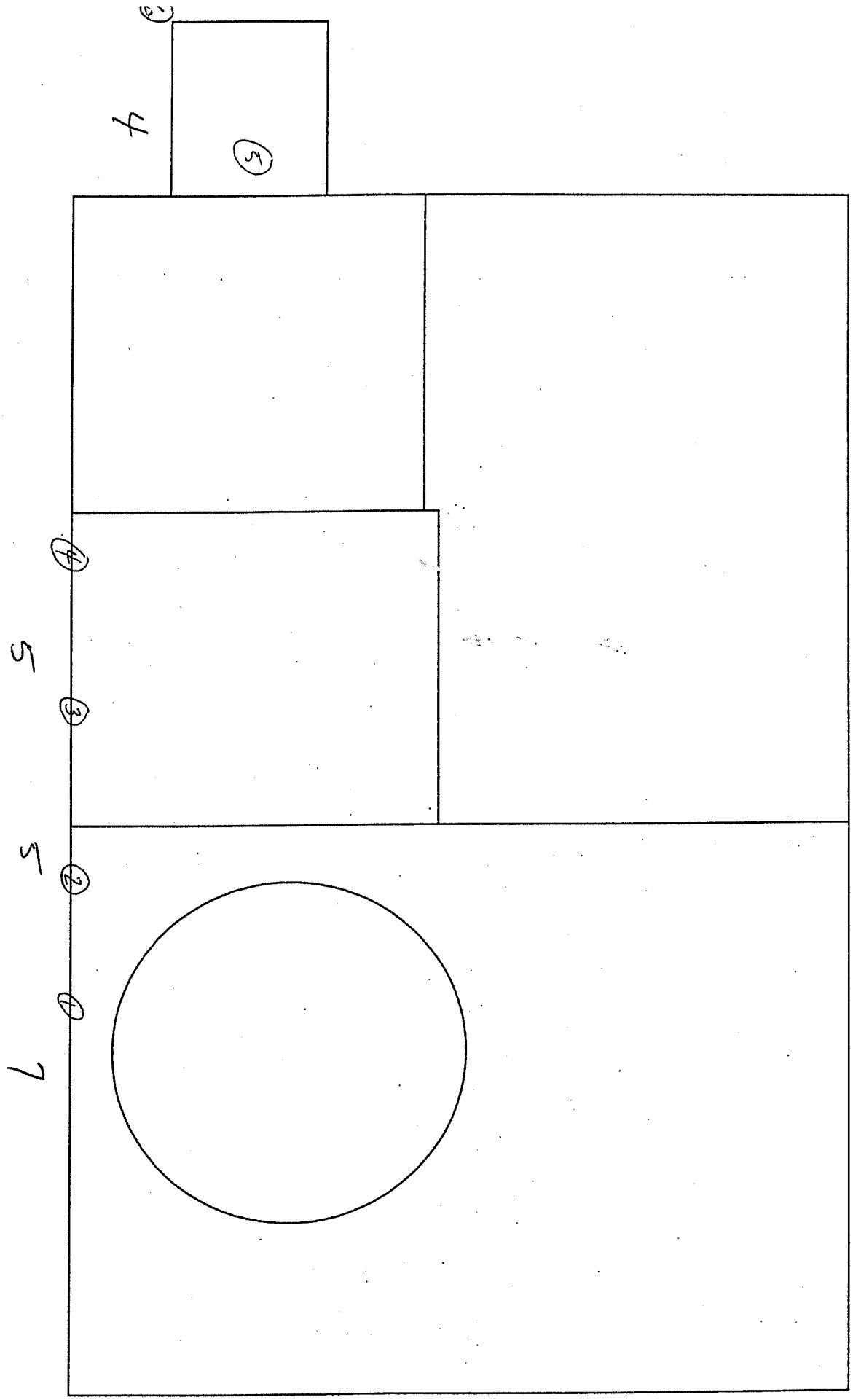
-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

#	General Area Dose Rate
#@#(cm)	Dose Rate at Distance From Source
*#	Contact Dose Rate
#β / #γ	Beta Corrected / Gamma Dose Rates
α	
β	

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⬠ - Tritium Swipe

A-145


4
5
7

Tan Smear Report

Batch ID:	smear - 200301291827	**Count Date:**	1/29/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,338	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	2 SMEARS AFTER EACH DRUM MOVEMENT TO VARIFY RWP CONDITIONS		

COPY

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.00 ± 0.00		**Alpha:**	29.90 ± 0.23	
Beta Rate:	4.30 ± 0.66		**Beta:**	44.28 ± 0.07	

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030129182754-A1	Unknown	0.00	0.00	9.05	12.87	7.29	22.27
20030129182924-A2	Unknown	6.69	4.73	9.05	15.13	7.64	22.27
20030129183034-A3	Unknown	0.00	0.00	9.05	231.93	23.41	22.27
20030129183144-A4	Unknown	6.69	4.73	9.05	195.80	21.60	22.27
20030129183254-A5	Unknown	0.00	0.00	9.05	60.30	12.66	22.27
20030129183404-A6	Unknown	0.00	0.00	9.05	170.96	20.26	22.27

Reviewed by: _____

COPY

INEEL

Christophe P Oertel

01/30/03 04:50 PM

To: Gary L Lusk/GLL2/CCO1/INEEL/US@INEL, D J Sorensen/DSOR/CCO1/INEEL/US@INEL
cc: Leah Street, Dennis McBride
Fax to:
Subject:

Gary/Rick

Attached is the data we took today on the cask packing plastic. We took several gamma scans of the area background, bagged plastic, and the plastic material alone. The spreadsheet shows the photos of the measurement configurations. The data in the spreadsheet shows that the plastic material had no surface contamination at above background levels for any isotopes other than possibly Cs-137. No statistically significant amounts of Am-241 or Co-60 were noted. The counts per second data were all extremely low and had high uncertainties. If you need further reconciliation regarding Am-241, I recommend a very long gamma count at RML or radiochemistry analysis. Please call if you have further questions.

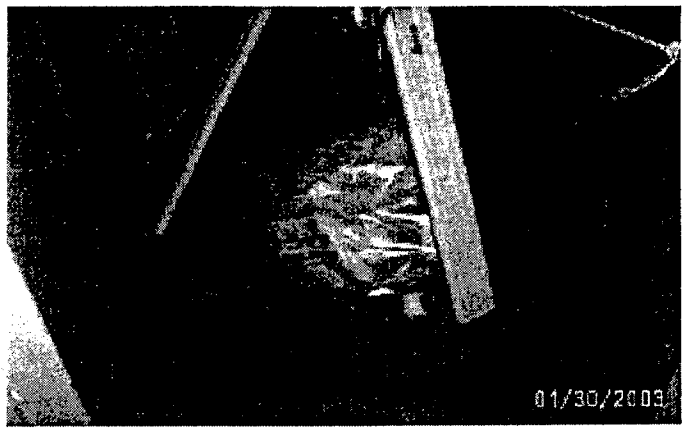
Chris Oertel 6-3541 521-0076
K.C. Thompson 6-2259 520-6401
Mike Evans 6-3541, 6-5247

TAN CASK PLASTIC.xl

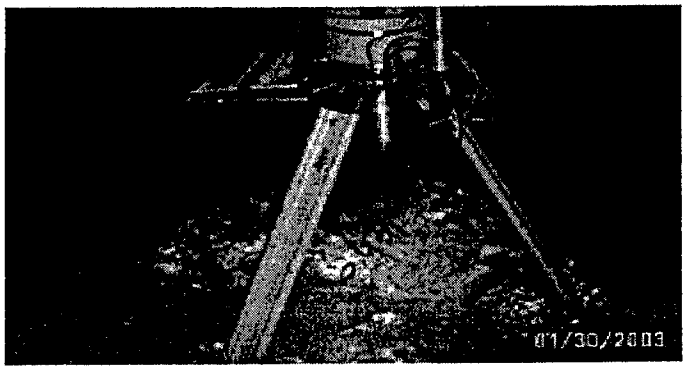
TAN CASK PLASTIC
1.30.2003
NTYPE HPGE 70% ALL COUNTS 600 SEC LTIME

OERTEL,THOMPSON,EVANS

ID	ISOTOPE	CPS	PHOTO
BACKGD	Cs-137	27.4	
	Co-60	0.3	
	Am-241	0.01	
PLASTIC1	Cs-137	43.2	1
BAG	Co-60	0.03	
	Am-241	0.05	
PLASTIC2	Cs-137	34.7	1
BAG	Co-60	0.02	
	Am-241	0.09	
PLASTIC	Cs-137	23.1	2
WRAP	Co-60	0.02	
AT 12"	Am-241	0.003	
PLASTIC	Cs-137	18.8	
WRAP	Co-60	0.01	
AT 3"	Am-241	0.02	



2 PHOTO1:Hpge detector counting bagged plastic wrap



PHOT0 2: HpGe detector counting laid out plastic wrap

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RADIOLOGICAL SURVEY REPORT

COPY

BARCODE #

BLDG.: TAN 607
AREA/ROOM: Hot Shop
RWP #: 3100 2510 02
LOG #: 4
DATE: 1/30/03
TIME: 1300

☐ ROUTINE **JOB DESCRIPTION**
☑ NON ROUTINE (SPECIFY) ☐ FOLLOW UP
COMMENTS: General Area Dose Rate measured at waist level
Surveys taken during payload disassembly
Report Batch # 53143

RCT: F. Bush / T Bush / R Jackson / R Parker REVIEWED BY:
PRINT/SIGNATURE

INSTRUMENTS		
Type	Serial #	Efficiency
ZA	800147	10 %
		%
		%
Scaler	324920	44.28 %βγ
		29.90 %α
Ko-20	802084	
electra	801530	

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		
1-12			See LB 5100 attachment for survey results				

CA Contamination Area
HCA High Contamination Area
RA Radiation Area
HRA High Radiation Area
VHRA Very High Radiation Area
RMA Radioactive Material Area
ARA Airborne Radioactivity Area
RBA Radiological Buffer Area
FCA Fixed Contamination Area
SCA Soil Contamination Area
URMA Underground Radioactive Material Area
SOR Step Off Pad

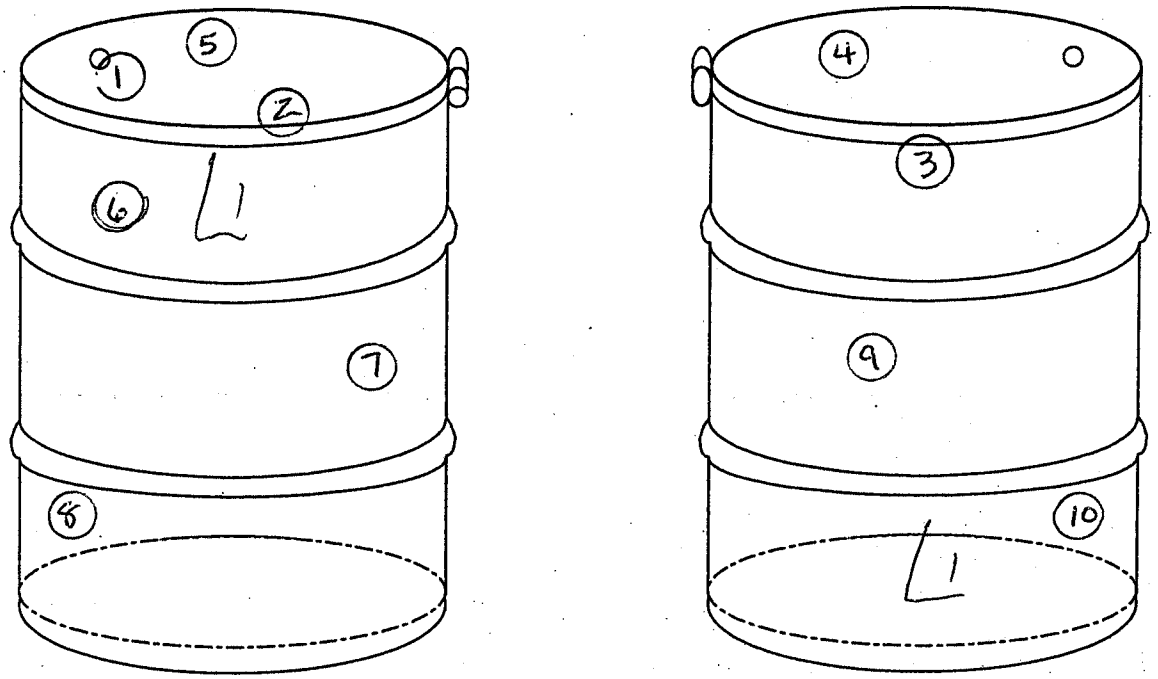
-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

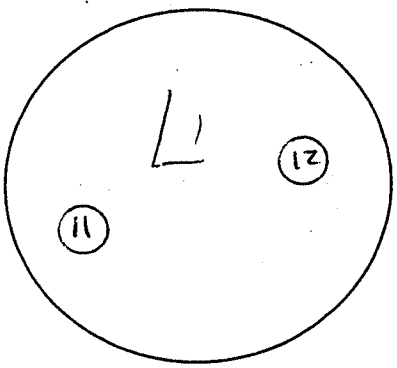
General Area Dose Rate
#@#(cm) Dose Rate at Distance From Source
*# Contact Dose Rate
#β / #γ Beta Corrected / Gamma Dose Rates
α Alpha
β
γ
n Neutron

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⬡ - Tritium Swipe

Drum # 7



5.0 @ Containment Wall



Bottom

Tan Smear Report

Batch ID:	smear - 200301300942	**Count Date:**	1/30/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,343	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	TRUPACT 157, DRUM #7, SMEARS 11 & 12 ARE CLOTH SMEARS ON THE BOTTOM OF DRUM.		

Background (cpm)				Efficiency (%)			
Alpha Rate:	0.20	±	0.14	**Alpha:**	29.90	±	0.23
Beta Rate:	5.50	±	0.74	**Beta:**	44.28	±	0.07

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030130094206-A1	Unknown	-0.67	0.47	14.21	3.39	6.21	24.39
20030130094336-A2	Unknown	2.68	3.38	14.21	14.68	8.00	24.39
20030130094446-A3	Unknown	6.02	4.75	14.21	12.42	7.68	24.39
20030130094556-A4	Unknown	-0.67	0.47	14.21	7.90	6.98	24.39
20030130094706-A5	Unknown	-0.67	0.47	14.21	32.75	10.24	24.39
20030130094816-A6	Unknown	6.02	4.75	14.21	50.81	12.07	24.39
20030130094936-A7	Unknown	2.68	3.38	14.21	59.85	12.88	24.39
20030130095046-A8	Unknown	2.68	3.38	14.21	32.75	10.24	24.39
20030130095156-A9	Unknown	6.02	4.75	14.21	19.20	8.61	24.39
20030130095307-A10	Unknown	2.68	3.38	14.21	16.94	8.31	24.39
20030130095417-A11	Unknown	-0.67	0.47	14.21	80.17	14.56	24.39
20030130095527-A12	Unknown	6.02	4.75	14.21	71.14	13.84	24.39

Reviewed by: _____

441.45#
10/10/97
Rev. #03

RADIOLOGICAL SURVEY REPORT

COPY

BARCODE #

BLDG.: TAN 607
AREA/ROOM: HOT SHOP
RWP #: 31002510 02
LOG #: 4
DATE: 1/30/03
TIME: 1320

☐ ROUTINE
☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP

JOB DESCRIPTION

COMMENTS: General Area Dose Rate measured at waist level
Surveys taken during payload disassembly
Report Batch # 5342

RCT: F. Bush / F Bush / Jackson / R Jackson
PRINT/SIGNATURE

REVIEWED BY: [signature]

INSTRUMENTS		
Type	Serial #	Efficiency
2A	800147	10 %
		%
		%
Scaler	324920	44.28 %βγ
		29.90 %α
R020	809084	
Electra	801530	

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		
1-12			See LB 5100 attachment for survey results				
	1					<1000	<20

CA	Contamination Area
HCA	High Contamination Area
RA	Radiation Area
HRA	High Radiation Area
VHRA	Very High Radiation Area
RMA	Radioactive Material Area
ARA	Airborne Radioactivity Area
RBA	Radiological Buffer Area
FCA	Fixed Contamination Area
SCA	Soil Contamination Area
URMA	Underground Radioactive Material Area

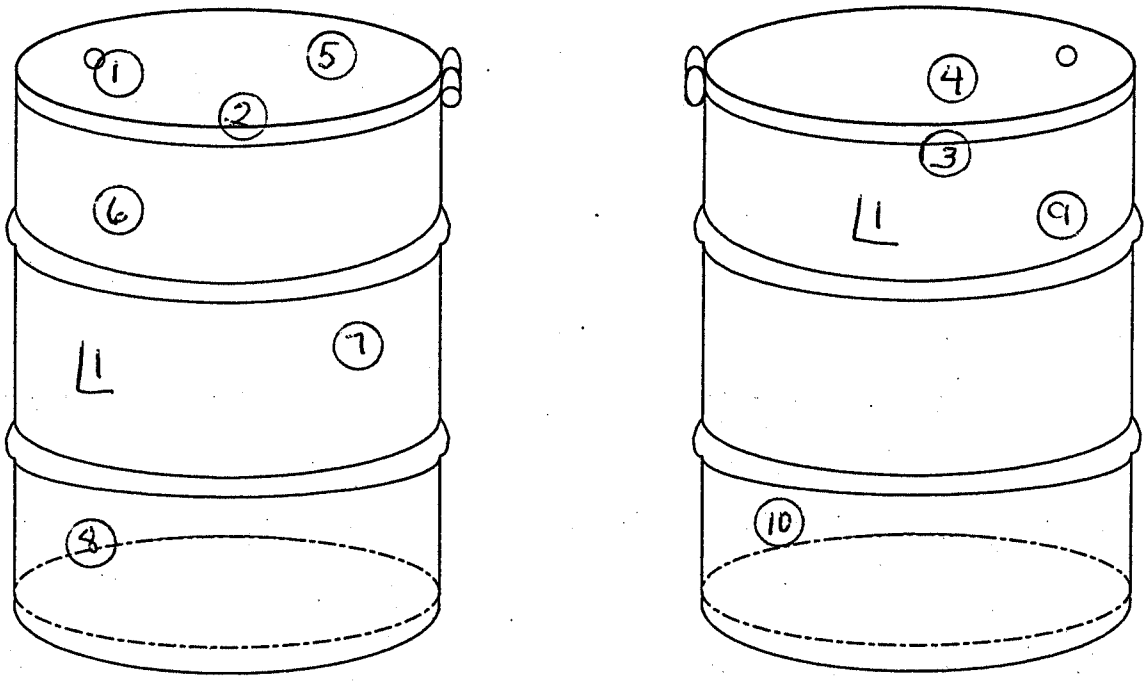
-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

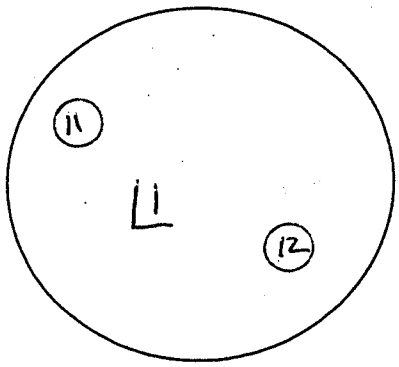
#	General Area Dose Rate
#@#(cm)	Dose Rate at Distance From Source
*#	Contact Dose Rate
#β / #γ	Beta Corrected / Gamma Dose Rates
α	Alpha
β	[illegible]
γ	[illegible]

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⌂ - Tritium Swipe

Drum # 5



5.0 @ Containment wall



Bottom

Tan Smear Report

Batch ID:	smear - 200301300908	**Count Date:**	1/30/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,342	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	TRUPACT 157, DRUM # 5, SMEAR 11 & 12 ARE CLOTH SMEARS TAKEN ON BOTTOM OF DRUM.		

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.20 ± 0.14		**Alpha:**	29.90 ± 0.23	
Beta Rate:	5.50 ± 0.74		**Beta:**	44.28 ± 0.07	

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030130090904-A1	Unknown	-0.67	0.47	14.21	7.90	6.98	24.39
20030130091035-A2	Unknown	2.68	3.38	14.21	12.42	7.68	24.39
20030130091145-A3	Unknown	2.68	3.38	14.21	14.68	8.00	24.39
20030130091255-A4	Unknown	-0.67	0.47	14.21	10.16	7.34	24.39
20030130091405-A5	Unknown	-0.67	0.47	14.21	19.20	8.61	24.39
20030130091515-A6	Unknown	2.68	3.38	14.21	46.30	11.64	24.39
20030130091635-A7	Unknown	2.68	3.38	14.21	75.66	14.20	24.39
20030130091745-A8	Unknown	2.68	3.38	14.21	14.68	8.00	24.39
20030130091855-A9	Unknown	2.68	3.38	14.21	32.75	10.24	24.39
20030130092005-A10	Unknown	6.02	4.75	14.21	23.71	9.19	24.39
20030130092115-A11	Unknown	6.02	4.75	14.21	66.62	13.47	24.39
20030130092225-A12	Unknown	-0.67	0.47	14.21	118.56	17.28	24.39

Reviewed by: _____

441.45#
10/10/97
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RADIOLOGICAL SURVEY REPORT

COPY

BARCODE #

BLDG.: TAN 607
AREA/ROOM: Hot Shop
RWP #: 3100 251062
LOG #: 4
DATE: 1/30/03
TIME: 1340

☐ ROUTINE **JOB DESCRIPTION**
☑ NON ROUTINE (SPECIFY) ☐ FOLLOW UP
COMMENTS: General Area Dose Rate measured at waist level
Surveys taken during payload disassembly
Report Batch #'s 5345, 5344
Report Batch # 5357 is Delayed count on smears of Drum #6

RCT: F. Bush / T Bush / R Jackson / R Jackson PRINT/SIGNATURE

REVIEWED BY:

INSTRUMENTS		
Type	Serial #	Efficiency
ZA	800147	10 %
		%
		%
Scaler	324920	44.28 %βγ
		29.90 %α
RO-20	802084	
electra	801530	10% α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		
1-12			See LB 5100 attachment for survey results				
	1		outside bag surface			<1000	<20

CA	Contamination Area
HCA	High Contamination Area
RA	Radiation Area
HRA	High Radiation Area
VHRA	Very High Radiation Area
RMA	Radioactive Material Area
ARA	Airborne Radioactivity Area
RBA	Radiological Buffer Area
FCA	Fixed Contamination Area
SCA	Soil Contamination Area
URMA	Underground Radioactive Material Area

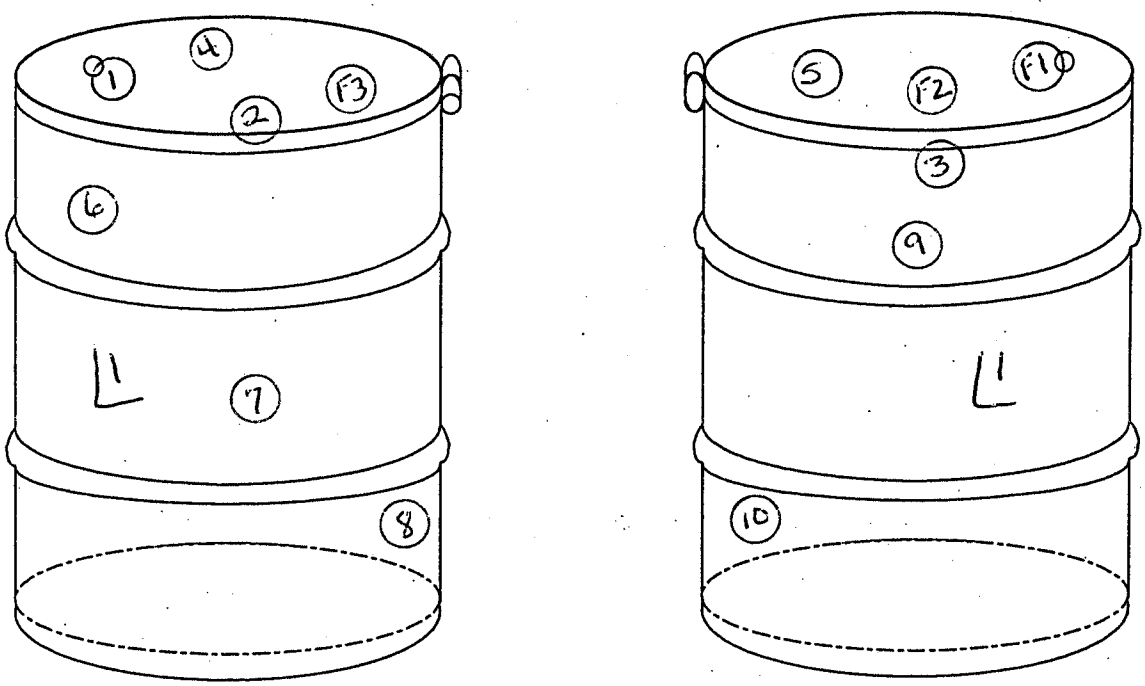
-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

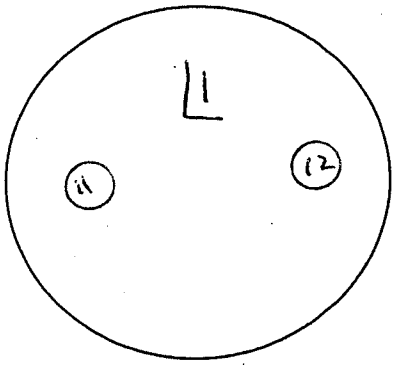
#	General Area Dose Rate
#@#(cm)	Dose Rate at Distance From Source
*#	Contact Dose Rate
#β / #γ	Beta Corrected / Gamma Dose Rates
α	Alpha
β	
γ	

□ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⌂ - Tritium Swipe

Drum # 6p



5.0e Containment Wall



Bottom

Tan Smear Report

Batch ID:	smear - 200301301043	**Count Date:**	1/30/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,345	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	FOLLOW UP SMEARS OF DRUM #6, #1 FILTER, #2 TOP OF DRUM, #3 TOP OF DRUM.		

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.20 ± 0.14		**Alpha:**	29.90 ± 0.23	
Beta Rate:	5.50 ± 0.74		**Beta:**	44.28 ± 0.07	

COPY

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
FOLLOW UP #1	Unknown	32.78	10.59	14.21	25.97	9.46	24.39
FOLLOW UP #2	Unknown	12.71	6.71	14.21	10.16	7.34	24.39
FOLLOW UP #3	Unknown	109.70	19.24	14.21	41.78	11.19	24.39

These were Cloth Smears

Reviewed by: _____

Tan Smear Report

Batch ID:	smear - 200301301021	**Count Date:**	1/30/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,344	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	TRUPACT 157, DRUM #6, SMEAR 11 & 12 ARE CLOTH SMEARS ON BOTTOM OF DRUM.		

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.20 ± 0.14		**Alpha:**	29.90 ± 0.23	
Beta Rate:	5.50 ± 0.74		**Beta:**	44.28 ± 0.07	

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030130102158-A1	Unknown	9.37	5.81	14.21	14.68	8.00	24.39
20030130102328-A2	Unknown	2.68	3.38	14.21	28.23	9.73	24.39
20030130102438-A3	Unknown	-0.67	0.47	14.21	21.45	8.91	24.39
20030130102548-A4	Unknown	19.40	8.21	14.21	14.68	8.00	24.39
20030130102658-A5	Unknown	39.47	11.60	14.21	19.20	8.61	24.39
20030130102808-A6	Unknown	6.02	4.75	14.21	28.23	9.73	24.39
20030130102928-A7	Unknown	2.68	3.38	14.21	53.07	12.28	24.39
20030130103038-A8	Unknown	2.68	3.38	14.21	19.20	8.61	24.39
20030130103148-A9	Unknown	6.02	4.75	14.21	25.97	9.46	24.39
20030130103258-A10	Unknown	2.68	3.38	14.21	30.49	9.99	24.39
20030130103409-A11	Unknown	-0.67	0.47	14.21	163.73	20.02	24.39
20030130103519-A12	Unknown	-0.67	0.47	14.21	165.99	20.14	24.39

Reviewed by: _____

Tan Smear Report

Batch ID:	smear - 200301310807	**Count Date:**	1/31/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,357	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	DELAYED COUNT ON DRUM #6		

Background (cpm)				Efficiency (%)			
Alpha Rate:	0.30	±	0.17	**Alpha:**	29.90	±	0.23
Beta Rate:	3.90	±	0.62	**Beta:**	44.28	±	0.07

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030131080714-A1	Unknown	2.34	3.39	15.37	13.78	7.28	21.50
20030131080844-A2	Unknown	5.69	4.77	15.37	16.03	7.62	21.50
20030131080955-A3	Unknown	-1.00	0.58	15.37	7.00	6.14	21.50
20030131081105-A4	Unknown	22.41	8.87	15.37	4.74	5.71	21.50
20030131081215-A5	Unknown	39.13	11.60	15.37	29.58	9.42	21.50
20030131081325-A6	Unknown	-1.00	0.58	15.37	47.65	11.38	21.50
20030131081445-A7	Unknown	-1.00	0.58	15.37	52.17	11.82	21.50
20030131081555-A8	Unknown	-1.00	0.58	15.37	36.36	10.20	21.50
20030131081705-A9	Unknown	-1.00	0.58	15.37	31.84	9.68	21.50
20030131081815-A10	Unknown	5.69	4.77	15.37	34.10	9.94	21.50
20030131081925-A11	Unknown	5.69	4.77	15.37	160.57	19.61	21.50
20030131082035-A12	Unknown	-1.00	0.58	15.37	185.41	20.99	21.50
FOLLOWUP # 1	Unknown	32.44	10.60	15.37	18.29	7.95	21.50
FOLLOWUP # 2	Unknown	19.06	8.21	15.37	126.69	17.55	21.50
FOLLOWUP # 3	Unknown	102.68	18.65	15.37	20.55	8.26	21.50

Reviewed by: _____

441.45#
10/10/97
Rev. #03

RADIOLOGICAL SURVEY REPORT

COPY

BARCODE #

BLDG.: 607 - Trupack
AREA/ROOM: Hot Shop Tent
RWP #: 3100 2510-02
LOG #: 5
DATE: 1-30-03
TIME: 1400

☐ ROUTINE **JOB DESCRIPTION**
☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP
COMMENTS: ~~General Area Dose Rate measured at waist level~~ 6" 1-30-03
Survey of Hood area after wipe down & exterior of Tent where Drum # 6 Was Moved out

RCT: K Jackson / R Jackson F Bush / T Bush REVIEWED BY:
PRINT/SIGNATURE

INSTRUMENTS		
Type	Serial #	Efficiency
2A	801260	10 %
Electra	801530	10 %
		%
Scaler	319971	33.9 %βγ
		25.5 %α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		
1-11			See Survey Map	<1000	<20		
		*	Tacky Roller			<1000	0

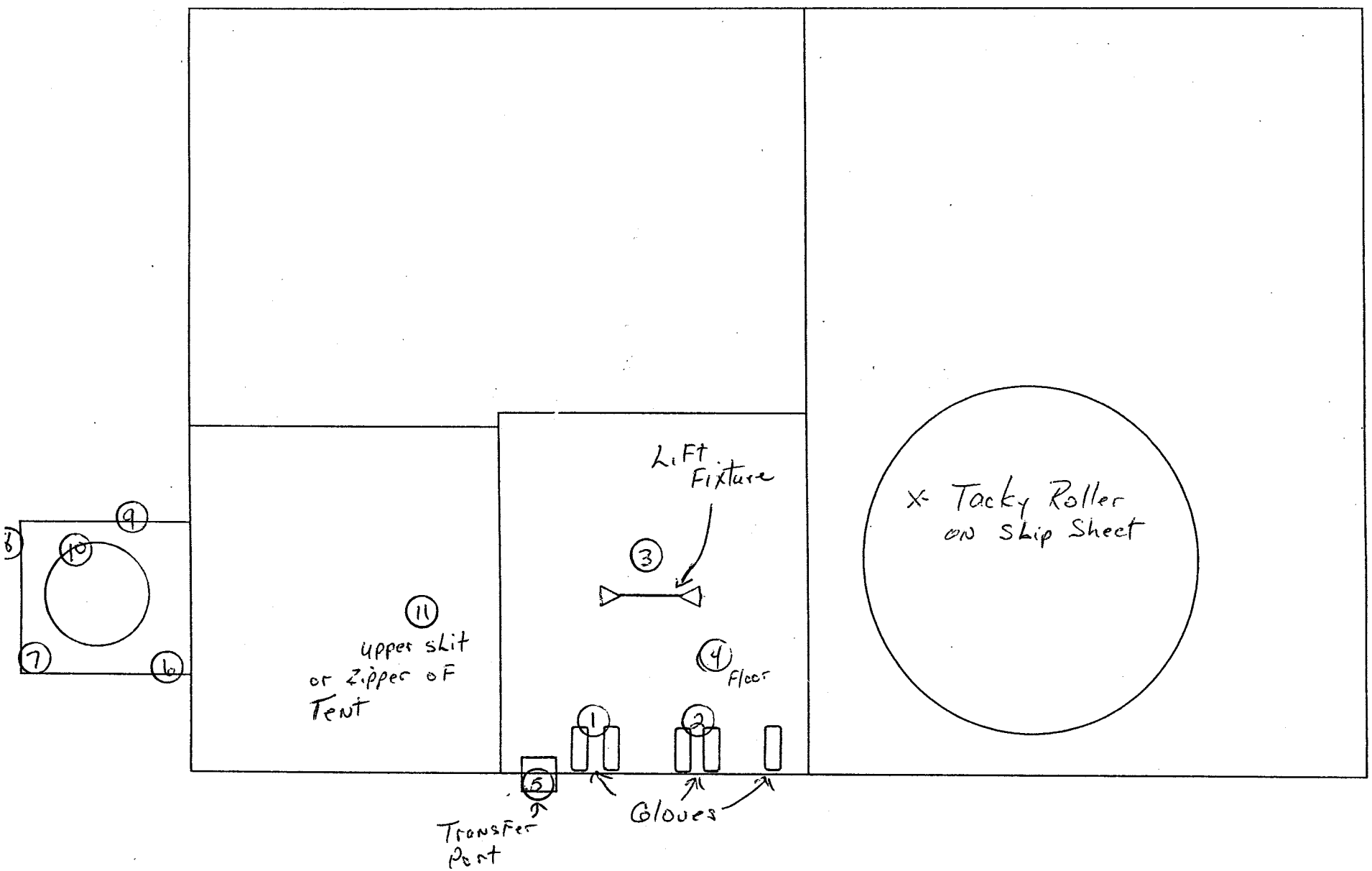
CA Contamination Area
HCA High Contamination Area
RA Radiation Area
HRA High Radiation Area
VHRA Very High Radiation Area
RMA Radioactive Material Area
ARA Airborne Radioactivity Area
RBA Radiological Buffer Area
FCA Fixed Contamination Area
SCA Soil Contamination Area
URMA Underground Radioactive Material Area
SOP Step-Off Pad

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

\# General Area Dose Rate
#@#(cm) Dose Rate at Distance From Source
*# Contact Dose Rate
#β / #γ Beta Corrected / Gamma Dose Rates
α Alpha
β Be
γ G A-169
n Neutron

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⬠ - Tritium Swipe


Lift Fixture
Tacky Roller on Slip Sheet
upper slit or zipper of Tent
Floor
Transfer Port
Gloves
1
2
3
4
5
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9
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11

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RADIOLOGICAL SURVEY REPORT

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BARCODE #

Pg 1 of 2

BLDG.: TAN 607 Hot Shop
AREA/ROOM: Trupact Tent
RWP #: 3100 25 10 02
LOG #: 6
DATE: 1/30/03
TIME: 1450

☐ ROUTINE
☑ NON ROUTINE (SPECIFY) ☐ FOLLOW UP

JOB DESCRIPTION

COMMENTS: General Area Dose Rate measured at waist level
Surveys taken during payload disassembly
Report Batch # 5350

RCT: J. Ely / J. Ely 2-13-03, L McKinlay / L McKinlay, E Long / E Long
PRINT/SIGNATURE

REVIEWED BY: [signature]

INSTRUMENTS		
Type	Serial #	Efficiency
2A	800147	10 %
		%
		%
Scaler	324920	41.28 %βγ
		29.90 %α
RO-20	801780	
electra	801430	10% α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN ($dpm/100cm^2$) βγ	SWIPE/SCAN ($dpm/100cm^2$) α	LAW (dpm) βγ	LAW (dpm) α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		
1-12			See LBS100 attachment for survey results			~~<1000~~	~~<20~~ GE 1-31
	1					<1000	<20

CA Contamination Area
HCA High Contamination Area
RA Radiation Area
HRA High Radiation Area
VHRA Very High Radiation Area
RMA Radioactive Material Area
ARA Airborne Radioactivity Area
RBA Radiological Buffer Area
FCA Fixed Contamination Area
SCA Soil Contamination Area
URMA Underground Radioactive Material Area
SOP Step Off Pad

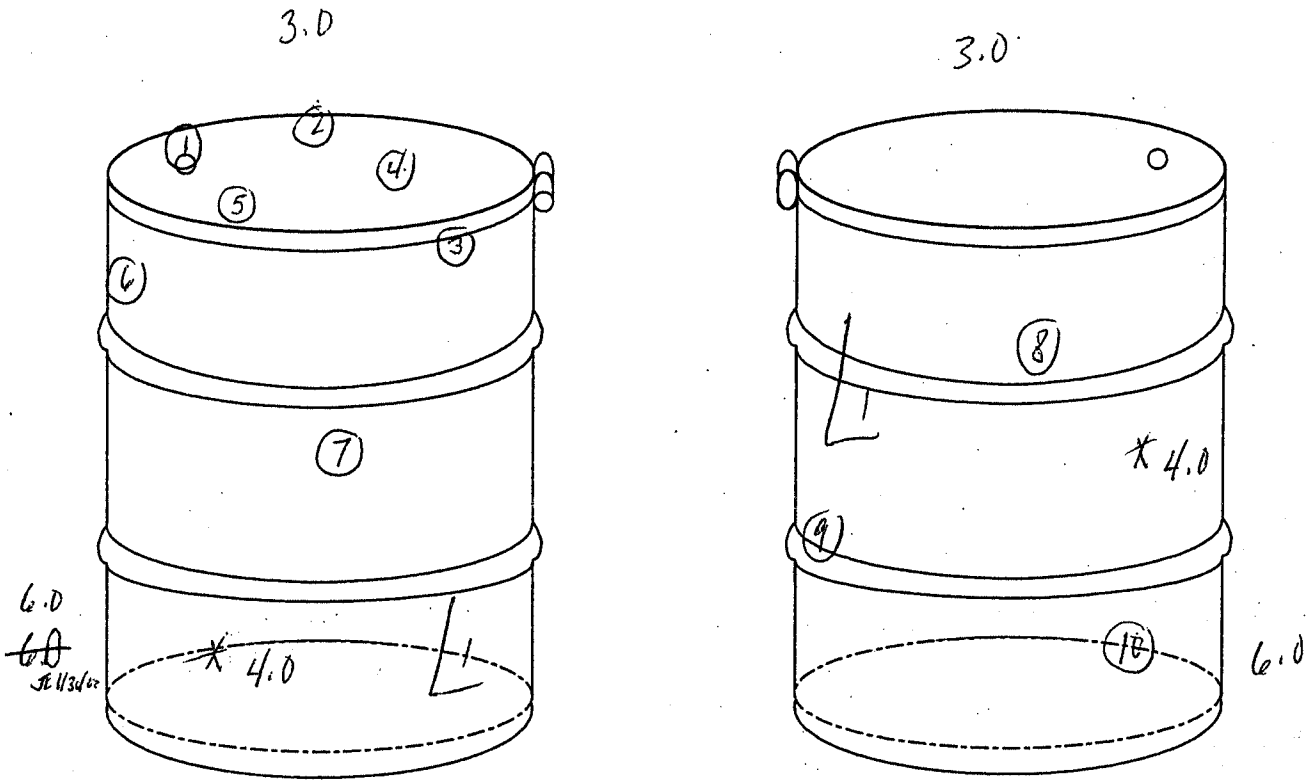
-x—x- Radiological Barrier

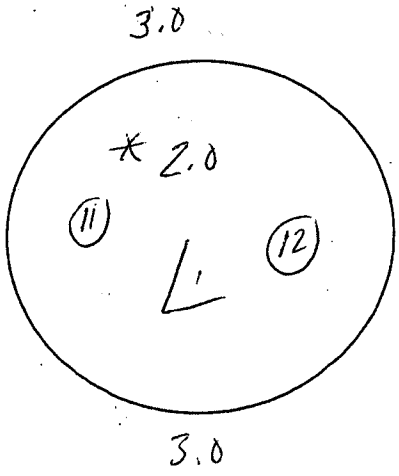
ALL dose rates are in mrem/hr, unless otherwise noted.

\# General Area Dose Rate
#@#(cm) Dose Rate at Distance From Source
*# Contact Dose Rate
#β / #γ Beta Corrected / Gamma Dose Rates
α Alpha
β
γ
Neutron

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⬠ - Tritium Swipe

Drum # 10





Bottom

Tan Smear Report

Batch ID:	smear - 200301301535	**Count Date:**	1/30/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,350	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	TRUPACT 157 DRUM # 10, SMEARS 11 & 12 ARE CLOTH SMEARS.		

Background (cpm)				Efficiency (%)			
Alpha Rate:	0.20	±	0.14	**Alpha:**	29.90	±	0.23
Beta Rate:	5.50	±	0.74	**Beta:**	44.28	±	0.07

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030130153557-A1	Unknown	2.68	3.38	14.21	5.65	6.60	24.39
20030130153727-A2	Unknown	-0.67	0.47	14.21	3.39	6.21	24.39
20030130153837-A3	Unknown	-0.67	0.47	14.21	7.90	6.98	24.39
20030130153947-A4	Unknown	9.37	5.81	14.21	-3.39	4.82	24.39
20030130154057-A5	Unknown	12.71	6.71	14.21	25.97	9.46	24.39
20030130154207-A6	Unknown	-0.67	0.47	14.21	28.23	9.73	24.39
20030130154318-A7	Unknown	-0.67	0.47	14.21	50.81	12.07	24.39
20030130154438-A8	Unknown	-0.67	0.47	14.21	19.20	8.61	24.39
20030130154548-A9	Unknown	2.68	3.38	14.21	37.26	10.72	24.39
20030130154658-A10	Unknown	2.68	3.38	14.21	21.45	8.91	24.39
20030130154808-A11	Unknown	2.68	3.38	14.21	188.57	21.37	24.39
20030130154918-A12	Unknown	-0.67	0.47	14.21	175.02	20.64	24.39

Reviewed by: _____

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RADIOLOGICAL SURVEY REPORT

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BARCODE #

BLDG.: TAN 607 Hot Shop
AREA/ROOM: Trupact Tent
RWP #: 3100 2510 02
LOG #: 6
DATE: 1/30/03
TIME: 1518

☐ ROUTINE
☑ NON ROUTINE (SPECIFY) ☐ FOLLOW UP

JOB DESCRIPTION

COMMENTS: General Area Dose Rate measured at waist level
Surveys taken during payload disassembly
Report Batch # 5349

RCT: J. Ely / J. Ely, McKinlay / L McKinlay, E Lang / E Lang
PRINT/SIGNATURE

REVIEWED BY: [signature]

INSTRUMENTS		
Type	Serial #	Efficiency
2A	800147	10 %
		%
		%
Scaler	324920	44.28 %βγ
		29.90 %α
RO-20	801780	
electra	801430	10% α

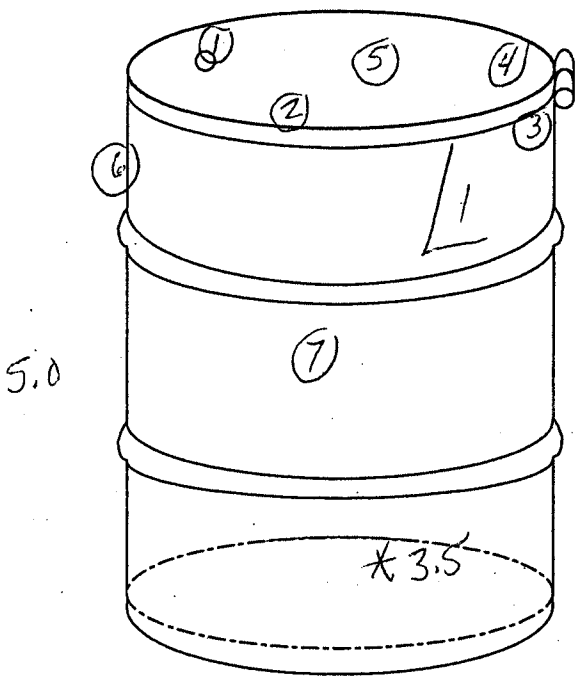
SURVEY DATA AND LEGEND

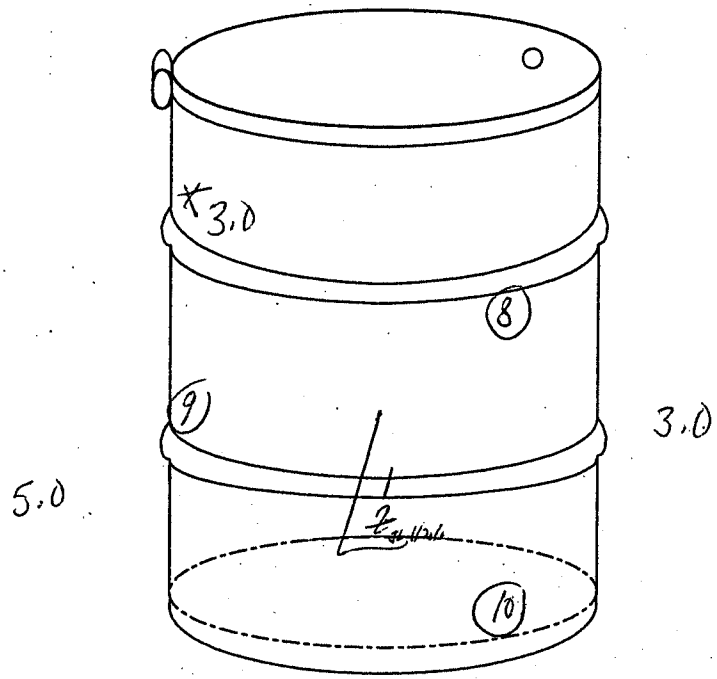
ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

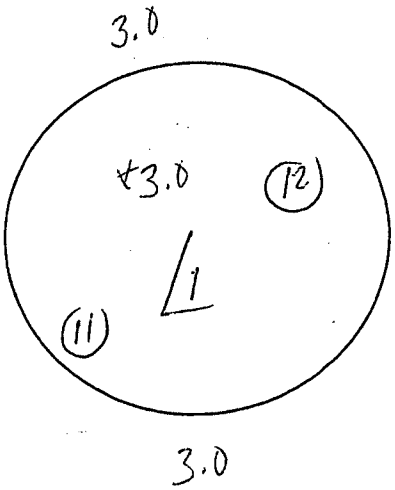
SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN ($dpm/100cm^2$) βγ	SWIPE/SCAN ($dpm/100cm^2$) α	LAW (dpm) βγ	LAW (dpm) α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		
1-12			See LB 5100 attachment for survey results			~~<1000~~	~~<20~~
	1					<1000	<20

CA	Contamination Area	-x—x-	Radiological Barrier	☐ -	Direct Scan
HCA	High Contamination Area		ALL dose rates are in mrem/hr, unless otherwise noted.	○ -	Swipe (Smear)
RA	Radiation Area			L -	Large Area Wipe (LAW)
HRA	High Radiation Area	#	General Area Dose Rate	△ -	Air Sample
VHRA	Very High Radiation Area	#@#(cm)	Dose Rate at Distance From Source	⌂ -	Tritium Swipe
RMA	Radioactive Material Area	*#	Contact Dose Rate		
ARA	Airborne Radioactivity Area	#β / #γ	Beta Corrected / Gamma Dose Rates		
RBA	Radiological Buffer Area	α	Alpha		
FCA	Fixed Contamination Area	β			
SCA	Soil Contamination Area	γ			
URMA	Underground Radioactive Material Area		Neutron		

Drum # 13







Bottom

Tan Smear Report

Pg 2 of 2

Batch ID:	smear - 200301301428	**Count Date:**	1/30/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,349	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	TRUPACT 157 DRUM # 13, SMEARS 11 & 12 ARE CLOTH SMEARS.		

COPY

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.20 ± 0.14		**Alpha:**	29.90 ± 0.23	
Beta Rate:	5.50 ± 0.74		**Beta:**	44.28 ± 0.07	

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030130142838-A1	Unknown	-0.67	0.47	14.21	30.49	9.99	24.39
20030130143009-A2	Unknown	16.05	7.49	14.21	-3.39	4.82	24.39
20030130143119-A3	Unknown	2.68	3.38	14.21	12.42	7.68	24.39
20030130143229-A4	Unknown	9.37	5.81	14.21	-7.90	3.61	24.39
20030130143339-A5	Unknown	6.02	4.75	14.21	23.71	9.19	24.39
20030130143449-A6	Unknown	-0.67	0.47	14.21	35.00	10.48	24.39
20030130143609-A7	Unknown	2.68	3.38	14.21	57.59	12.69	24.39
20030130143719-A8	Unknown	-0.67	0.47	14.21	12.42	7.68	24.39
20030130143829-A9	Unknown	2.68	3.38	14.21	28.23	9.73	24.39
20030130143939-A10	Unknown	2.68	3.38	14.21	10.16	7.34	24.39
20030130144049-A11	Unknown	-0.67	0.47	14.21	168.25	20.27	24.39
20030130144159-A12	Unknown	-0.67	0.47	14.21	154.70	19.50	24.39

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BARCODE #

BLDG.: TAN 607 Hot Shop
AREA/ROOM: Transect Pent
RWP #: 3/00 2510 02
LOG #: 6
DATE: 1/30/03
TIME: 1532

☐ ROUTINE
☑ NON ROUTINE (SPECIFY) ☐ FOLLOW UP

JOB DESCRIPTION

COMMENTS: General Area Dose Rate measured at waist level
Surveys taken during payload disassembly
Report Batch # 5348

RCT: J. Elliott / L. Dingel / L. McKinlay / E. Long

PRINT/SIGNATURE

REVIEWED BY: [signature]

INSTRUMENTS		
Type	Serial #	Efficiency
2A	800147	10 %
		%
		%
Scaler	324920	44.28 %βγ
		29.90 %α
RO-20	801780	
electra	801430	10% α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²) βγ	SWIPE/SCAN (dpm/100cm²) α	LAW (dpm) βγ	LAW (dpm) α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		
1-12			See LB5100 attachment for survey results			~~<1000~~	~~<20~~ GCL 1-3
	1					<1000	<20

CA Contamination Area
HCA High Contamination Area
RA Radiation Area
HRA High Radiation Area
VHRA Very High Radiation Area
RMA Radioactive Material Area
ARA Airborne Radioactivity Area
RBA Radiological Buffer Area
FCA Fixed Contamination Area
SCA Soil Contamination Area
URMA Underground Radioactive Material Area

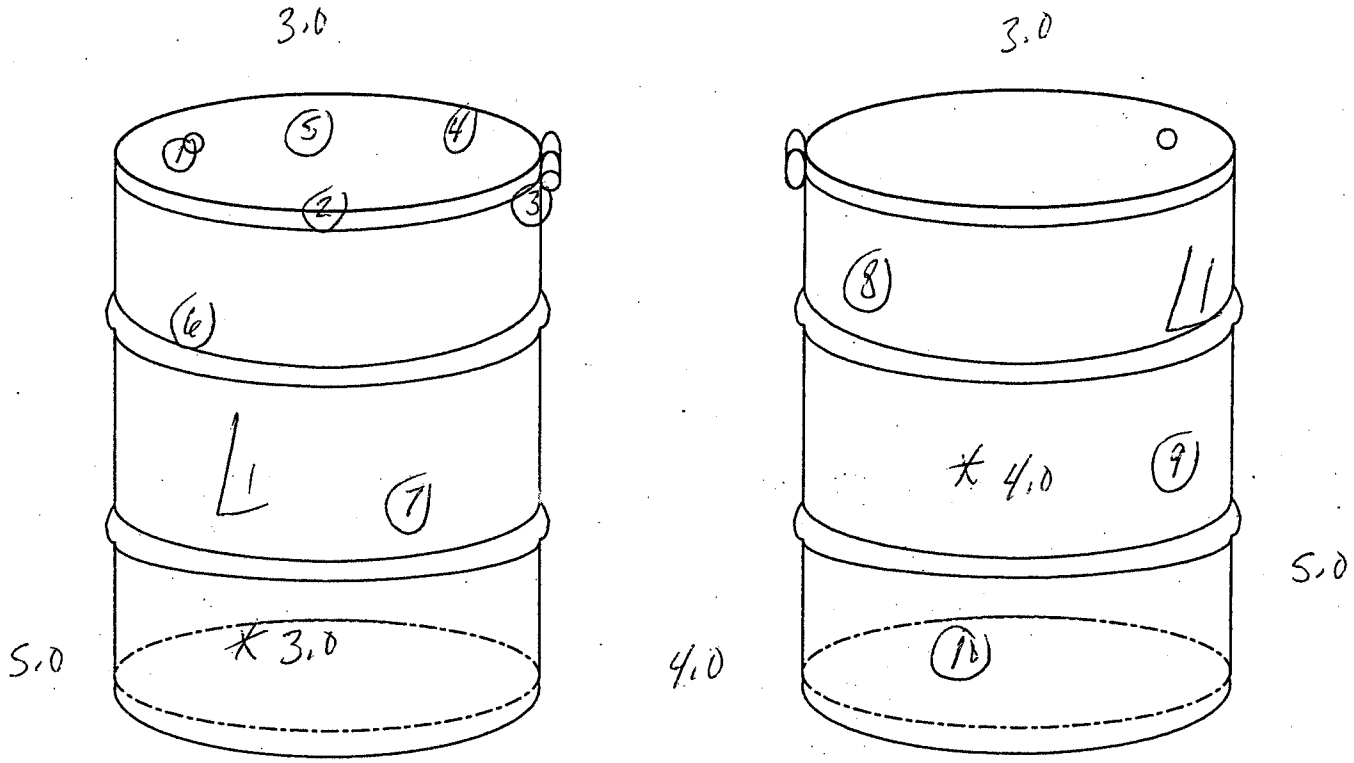
-x—x- Radiological Barrier

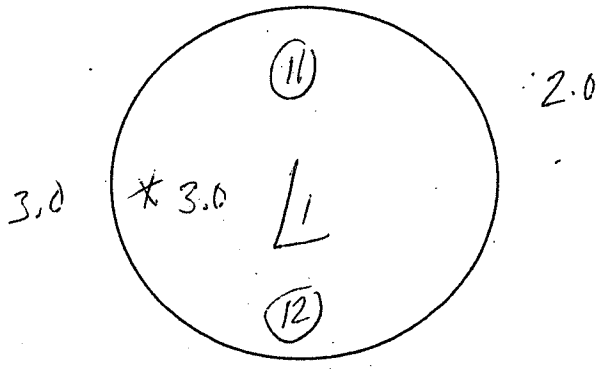
ALL dose rates are in mrem/hr, unless otherwise noted.

\# General Area Dose Rate
\#@#(cm) Dose Rate at Distance From Source
*# Contact Dose Rate
\#β / #γ Beta Corrected / Gamma Dose Rates
α Alpha
β
γ Neutron

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⬠ - Tritium Swipe

Drum # 9





Bottom

Tan Smear Report

Batch ID: smear - 200301301357
Group: A
Device: LB5100 #324920
Batch Key: 5,348
Selected Geometry: 1/4" Stainless Steel
Survey Location: TRUPACT 157, DRUM # 9. SMEARS 11 & 12 ARE CLOTH SMEARS.

Count Date: 1/30/03
Count Minutes: 1.0
Count Mode: Simultaneous
Operating Volts: 1320

COPY

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.20 ± 0.14		**Alpha:**	29.90 ± 0.23	
Beta Rate:	5.50 ± 0.74		**Beta:**	44.28 ± 0.07	

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030130135749-A1	Unknown	-0.67	0.47	14.21	14.68	8.00	24.39
20030130135919-A2	Unknown	-0.67	0.47	14.21	1.13	5.78	24.39
20030130140029-A3	Unknown	-0.67	0.47	14.21	1.13	5.78	24.39
20030130140139-A4	Unknown	-0.67	0.47	14.21	1.13	5.78	24.39
20030130140249-A5	Unknown	-0.67	0.47	14.21	16.94	8.31	24.39
20030130140359-A6	Unknown	-0.67	0.47	14.21	30.49	9.99	24.39
20030130140509-A7	Unknown	-0.67	0.47	14.21	62.11	13.08	24.39
20030130140629-A8	Unknown	-0.67	0.47	14.21	23.71	9.19	24.39
20030130140740-A9	Unknown	-0.67	0.47	14.21	35.00	10.48	24.39
20030130140850-A10	Unknown	-0.67	0.47	14.21	37.26	10.72	24.39
20030130141000-A11	Unknown	2.68	3.38	14.21	213.42	22.65	24.39
20030130141110-A12	Unknown	-0.67	0.47	14.21	111.79	16.83	24.39

Reviewed by: _____

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RADIOLOGICAL SURVEY REPORT

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BARCODE #

BLDG.: TAN 607 Hot Shop
AREA/ROOM: Inspect Unit
RWP #: 3100 2510 02
LOG #: 4
DATE: 1/30/02
TIME: 1540

☐ ROUTINE
☑ NON ROUTINE (SPECIFY) ☐ FOLLOW UP

JOB DESCRIPTION

COMMENTS: General Area Dose Rate measured at waist level
Surveys taken during payload disassembly
Report Batch # 5347

RCT: J. Ely / J. Ely / [illegible] / L. McKinlay
PRINT/SIGNATURE
Elroy Elroy

REVIEWED BY: [signature]

INSTRUMENTS		
Type	Serial #	Efficiency
2A	800147	10 %
		%
		%
Scaler	324920	44.28 %βγ
		29.90 %α
R6-20	801780	
electra	801430	10% α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN ($dpm/100cm^2$) βγ	SWIPE/SCAN ($dpm/100cm^2$) α	LAW (dpm) βγ	LAW (dpm) α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		
1-12			See LB 5100 attachment for survey results			~~<1000~~	~~<20~~ ELE 1-31
	1					<1000	<20

CA	Contamination Area
HCA	High Contamination Area
RA	Radiation Area
HRA	High Radiation Area
VHRA	Very High Radiation Area
RMA	Radioactive Material Area
ARA	Airborne Radioactivity Area
RBA	Radiological Buffer Area
FCA	Fixed Contamination Area
SCA	Soil Contamination Area
URMA	Underground Radioactive Material Area

-x—x- Radiological Barrier

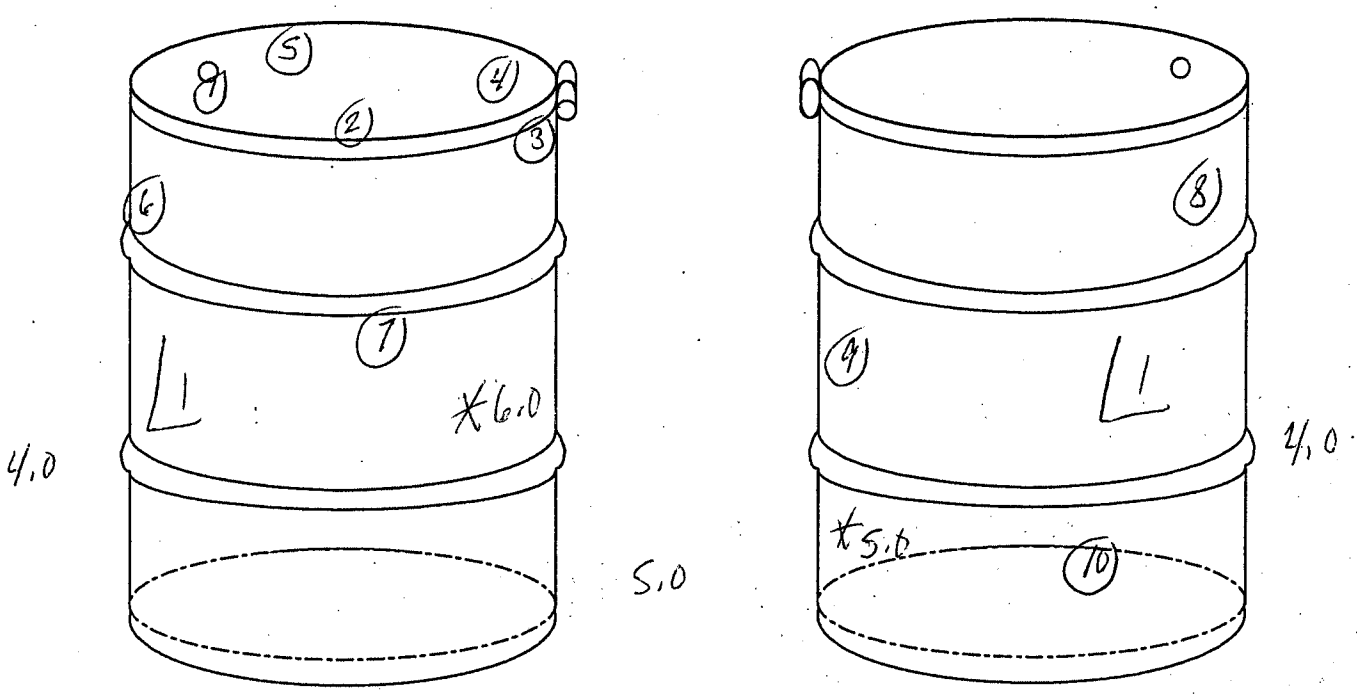
ALL dose rates are in mrem/hr, unless otherwise noted.

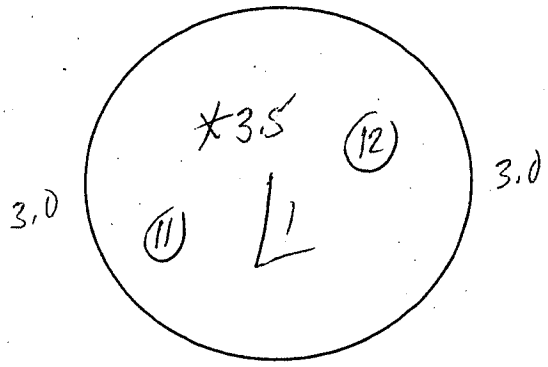
#	General Area Dose Rate
#@#(cm)	Dose Rate at Distance From Source
*#	Contact Dose Rate
#β / #γ	Beta Corrected / Gamma Dose Rates
α	Alpha
β	
γ	

□ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⌂ - Tritium Swipe

A-183

Drum # 8





Bottom

Tan Smear Report

Batch ID:	smear - 200301301324	**Count Date:**	1/30/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,347	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	TRUPACT 157, DRUM # 8, SMEAR # 11 & 12 ARE CLOTH SMEARS TAKEN ON BOTTOM OF DRUM.		

Background (cpm)				Efficiency (%)			
Alpha Rate:	0.20	±	0.14	**Alpha:**	29.90	±	0.23
Beta Rate:	5.50	±	0.74	**Beta:**	44.28	±	0.07

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030130132407-A1	Unknown	-0.67	0.47	14.21	21.45	8.91	24.39
20030130132538-A2	Unknown	-0.67	0.47	14.21	7.90	6.98	24.39
20030130132648-A3	Unknown	2.68	3.38	14.21	14.68	8.00	24.39
20030130132758-A4	Unknown	6.02	4.75	14.21	1.13	5.78	24.39
20030130132908-A5	Unknown	-0.67	0.47	14.21	25.97	9.46	24.39
20030130133018-A6	Unknown	-0.67	0.47	14.21	46.30	11.64	24.39
20030130133138-A7	Unknown	6.02	4.75	14.21	41.78	11.19	24.39
20030130133248-A8	Unknown	-0.67	0.47	14.21	39.52	10.96	24.39
20030130133358-A9	Unknown	-0.67	0.47	14.21	25.97	9.46	24.39
20030130133508-A10	Unknown	-0.67	0.47	14.21	14.68	8.00	24.39
20030130133618-A11	Unknown	2.68	3.38	14.21	265.36	25.11	24.39
20030130133728-A12	Unknown	2.68	3.38	14.21	136.63	18.42	24.39

Reviewed by: D T Rush

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RADIOLOGICAL SURVEY REPORT

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BARCODE #

BLDG.: TAN 607 Hot Shop
AREA/ROOM: Trupact Tent
RWP #: 3100 2510 02
LOG #: 7
DATE: 1/30/03
TIME: 1805

JOB DESCRIPTION

☐ ROUTINE
☑ NON ROUTINE (SPECIFY) ☐ FOLLOW UP

COMMENTS: General Area Dose Rate measured at waist level
Surveys taken during payload disassembly
Report Batch # 5352

RCT: J.EH / J.9W / [illegible] / Lackinay / Elsby / E Terry
PRINT/SIGNATURE

REVIEWED BY: [signature]

INSTRUMENTS		
Type	Serial #	Efficiency
2A	800147	10 %
		%
		%
Scaler	324920	44.28 %βγ
		29.90 %α
RO-20	801780	
electra	801430	10 % α

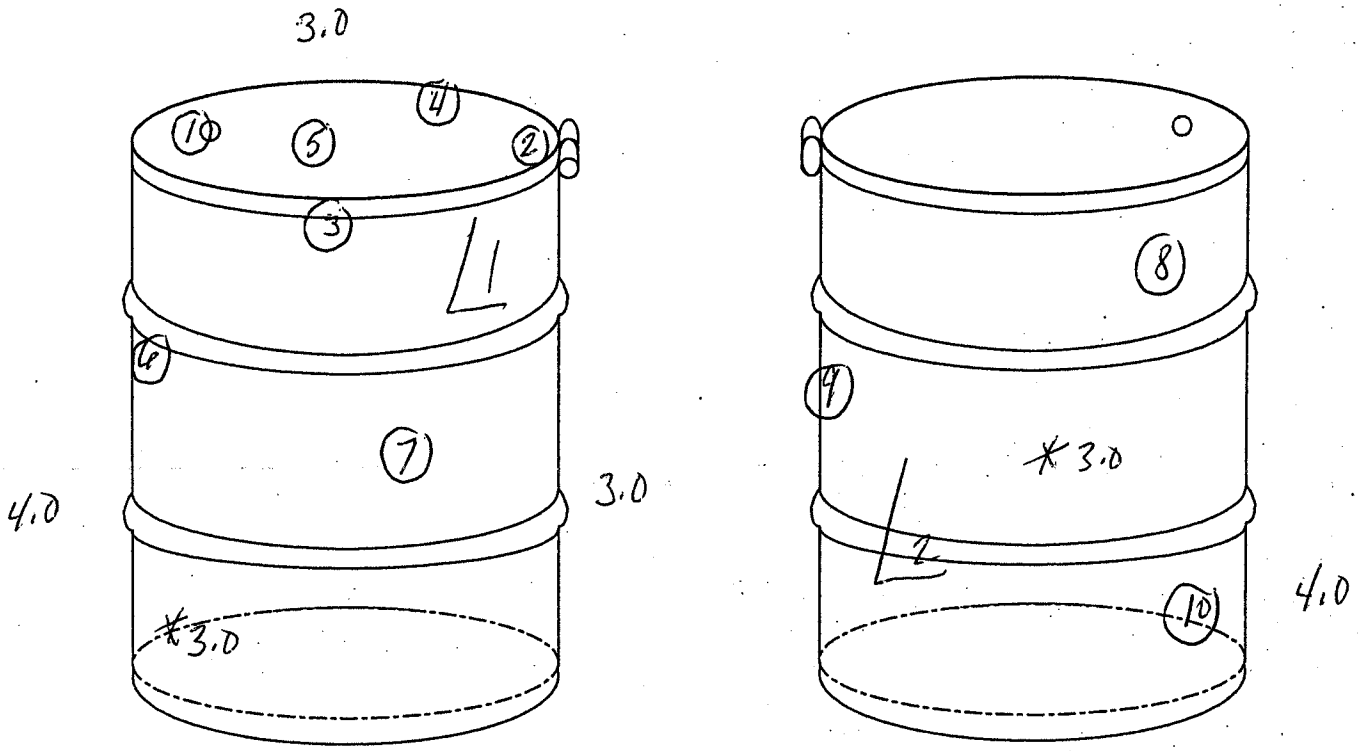
SURVEY DATA AND LEGEND

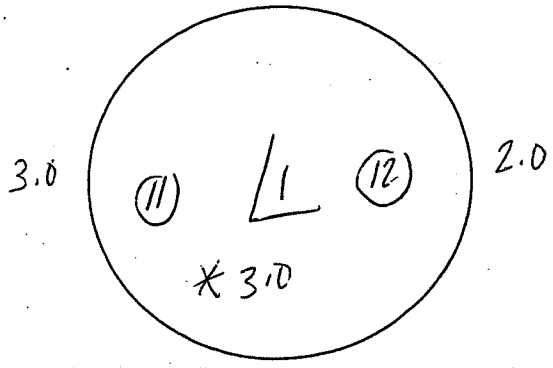
ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²) βγ	SWIPE/SCAN (dpm/100cm²) α	LAW (dpm) βγ	LAW (dpm) α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		
1-12			See LB5100 attachment for survey results			~~<1000~~	~~<20~~
	1					<1000	<20

CA	Contamination Area	-x—x-	Radiological Barrier	☐ -	Direct Scan
HCA	High Contamination Area		ALL dose rates are in mrem/hr, unless otherwise noted.	○ -	Swipe (Smear)
RA	Radiation Area			L -	Large Area Wipe (LAW)
HRA	High Radiation Area	#	General Area Dose Rate	△ -	Air Sample
VHRA	Very High Radiation Area	#@#(cm)	Dose Rate at Distance From Source	⌂ -	Tritium Swipe
RMA	Radioactive Material Area	*#	Contact Dose Rate		
ARA	Airborne Radioactivity Area	#β / #γ	Beta Corrected / Gamma Dose Rates		
RBA	Radiological Buffer Area	α	Alpha		
FCA	Fixed Contamination Area	β	Beta		
SCA	Soil Contamination Area	γ	Gamma		
URMA	Underground Radioactive Material Area	n	Neutron		
SOP	Step-Off Pad				

Drum # 12





Bottom

Tan Smear Report

Batch ID:	smear - 200301301728	**Count Date:**	1/30/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,352	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	TRUPACT 157 DRUM # 12, SMEARS 11& 12 ARE CLOTH SMEARS.		

Background (cpm)				Efficiency (%)			
Alpha Rate:	0.20	±	0.14	**Alpha:**	29.90	±	0.23
Beta Rate:	5.50	±	0.74	**Beta:**	44.28	±	0.07

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030130172900-A1	Unknown	-0.67	0.47	14.21	-3.39	4.82	24.39
20030130173030-A2	Unknown	-0.67	0.47	14.21	23.71	9.19	24.39
20030130173140-A3	Unknown	2.68	3.38	14.21	10.16	7.34	24.39
20030130173250-A4	Unknown	-0.67	0.47	14.21	-3.39	4.82	24.39
20030130173400-A5	Unknown	2.68	3.38	14.21	12.42	7.68	24.39
20030130173510-A6	Unknown	-0.67	0.47	14.21	28.23	9.73	24.39
20030130173620-A7	Unknown	6.02	4.75	14.21	62.11	13.08	24.39
20030130173741-A8	Unknown	-0.67	0.47	14.21	37.26	10.72	24.39
20030130173851-A9	Unknown	-0.67	0.47	14.21	10.16	7.34	24.39
20030130174001-A10	Unknown	2.68	3.38	14.21	23.71	9.19	24.39
20030130174111-A11	Unknown	-0.67	0.47	14.21	152.44	19.37	24.39
20030130174221-A12	Unknown	-0.67	0.47	14.21	55.33	12.48	24.39

Reviewed by: _____

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RADIOLOGICAL SURVEY REPORT

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Pg 1 of 2

BARCODE #

BLDG.: TAN 607 Hot Shop
AREA/ROOM: Trupact Tent
RWP #: 3100 2510 02
LOG #: 7
DATE: 1/30/03
TIME: 1822

JOB DESCRIPTION

☐ ROUTINE
☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP

COMMENTS: General Area Dose Rate measured at waist level
Surveys taken during payload disassembly
Report Batch # 5351

RCT: J. Ely / J. Ely / McKinley / L. McKinley
PRINT/SIGNATURE
E. Alley / E. Alley

REVIEWED BY: [signature]

INSTRUMENTS		
Type	Serial #	Efficiency
2A	800147	10 %
		%
		%
Scaler	324920	44.28 %βγ
		29.90 %α
RO-20	801780	
electra	801430	10% α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm^2) βγ	SWIPE/SCAN (dpm/100cm^2) α	LAW (dpm) βγ	LAW (dpm) α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		
1-12			See LB5100 attachment for survey results			~~<1000~~	~~<20~~
	1					<1000	<20

CA Contamination Area
HCA High Contamination Area
RA Radiation Area
HRA High Radiation Area
VHRA Very High Radiation Area
RMA Radioactive Material Area
ARA Airborne Radioactivity Area
RBA Radiological Buffer Area
FCA Fixed Contamination Area
SCA Soil Contamination Area
URMA Underground Radioactive Material Area
SOP Step-Off Pad

-x—x- Radiological Barrier

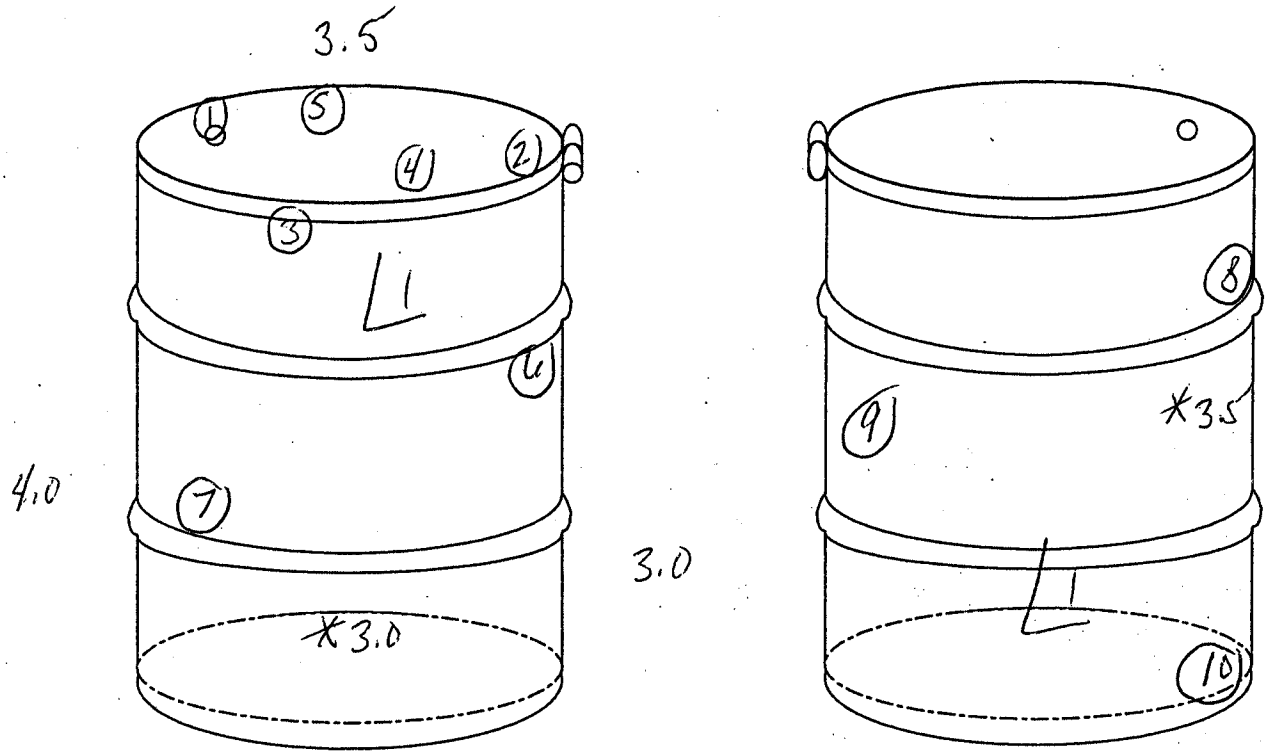
ALL dose rates are in mrem/hr, unless otherwise noted.

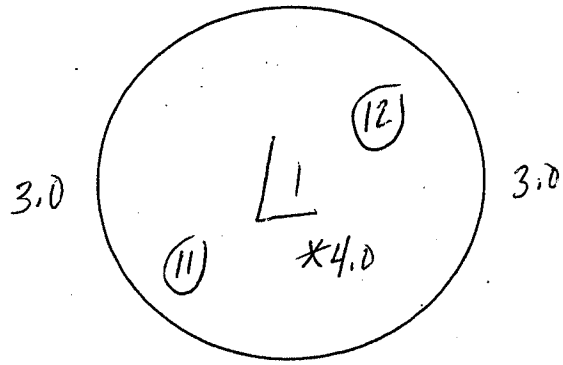
\# General Area Dose Rate
\#@#(cm) Dose Rate at Distance From Source
*# Contact Dose Rate
\#β / #γ Beta Corrected / Gamma Dose Rates
α Alpha
β
γ
n Neutron

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⌂ - Tritium Swipe

A-191

Drum # 14





Bottom

Tan Smear Report

Batch ID:	smear - 200301301654	**Count Date:**	1/30/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,351	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	TRUPACT 157 DRUM # 14, SMEARS 11 & 12 ARE CLOTH SMEARS.		

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.20 ± 0.14		**Alpha:**	29.90 ± 0.23	
Beta Rate:	5.50 ± 0.74		**Beta:**	44.28 ± 0.07	

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030130165453-A1	Unknown	-0.67	0.47	14.21	10.16	7.34	24.39
20030130165624-A2	Unknown	2.68	3.38	14.21	7.90	6.98	24.39
20030130165734-A3	Unknown	2.68	3.38	14.21	14.68	8.00	24.39
20030130165844-A4	Unknown	-0.67	0.47	14.21	14.68	8.00	24.39
20030130165954-A5	Unknown	2.68	3.38	14.21	7.90	6.98	24.39
20030130170104-A6	Unknown	-0.67	0.47	14.21	25.97	9.46	24.39
20030130170224-A7	Unknown	-0.67	0.47	14.21	44.04	11.42	24.39
20030130170334-A8	Unknown	2.68	3.38	14.21	48.55	11.85	24.39
20030130170444-A9	Unknown	-0.67	0.47	14.21	30.49	9.99	24.39
20030130170554-A10	Unknown	-0.67	0.47	14.21	37.26	10.72	24.39
20030130170704-A11	Unknown	-0.67	0.47	14.21	132.11	18.15	24.39
20030130170814-A12	Unknown	-0.67	0.47	14.21	644.76	38.57	24.39

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RADIOLOGICAL SURVEY REPORT

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BARCODE #

BLDG.: TAN 607 Hot Shop
AREA/ROOM: Tripact Cont
RWP #: 31002510 02
LOG #: 7
DATE: 1/30/03
TIME: 1400-1820

☐ ROUTINE **JOB DESCRIPTION**
☑ NON ROUTINE (SPECIFY) ☐ FOLLOW UP
COMMENTS: ~~General Area Dose Rate measured at waist level~~ GLL 1-31-03
Special Contamination surveys taken to verify contamination levels during and after disassembly of payload

RCT: J. Ely / J. 9U / A. Bird / Elang / E Jany
PRINT/SIGNATURE

REVIEWED BY: [signature]

INSTRUMENTS		
Type	Serial #	Efficiency
2A	800147	10 %
		%
		%
Scaler	225015	40 %βγ
		24 %α
electra	801530	10% α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm^2)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		
~~1-23~~ JE 1/30/03	1-14					<1000	<20

CA	Contamination Area
HCA	High Contamination Area
RA	Radiation Area
HRA	High Radiation Area
VHRA	Very High Radiation Area
RMA	Radioactive Material Area
ARA	Airborne Radioactivity Area
RBA	Radiological Buffer Area
FCA	Fixed Contamination Area
SCA	Soil Contamination Area
URMA	Underground Radioactive Material Area
SOP	Step-Off Pad

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

#	General Area Dose Rate
#@#(cm)	Dose Rate at Distance From Source
*#	Contact Dose Rate
#β / #γ	Beta Corrected / Gamma Dose Rates
α	Alpha
β	Be
γ	Ga
n	Neutron

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⌂ - Tritium Swipe

Trailer box

441.45#
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RADIOLOGICAL SURVEY REPORT

COPY

BARCODE #

BLDG.: 607	☐ ROUTINE **JOB DESCRIPTION**
AREA/ROOM: water shop	☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP Report Batch #: 5365
RWP #: 31000446 02	COMMENTS: CASK # 157 Drum's in SWB For Shipment
LOG #: 11	
DATE: 1-31-03	All neutron reading's < Bkg unless noted.
TIME: 1825	Alarm TASK # 29 CO1689 0117

RCT: J. Bird / McKinlay   REVIEWED BY: [signature]

PRINT/SIGNATURE

Jon Johnston [signature]

INSTRUMENTS		
Type	Serial #	Efficiency
		%
		%
		%
Scaler	324920	44.2 %βγ
		29.9 %α
RO-20	812084	
E600	81850	

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	<200/NA	<20/NA		
1-12			See LB 5100 print out				

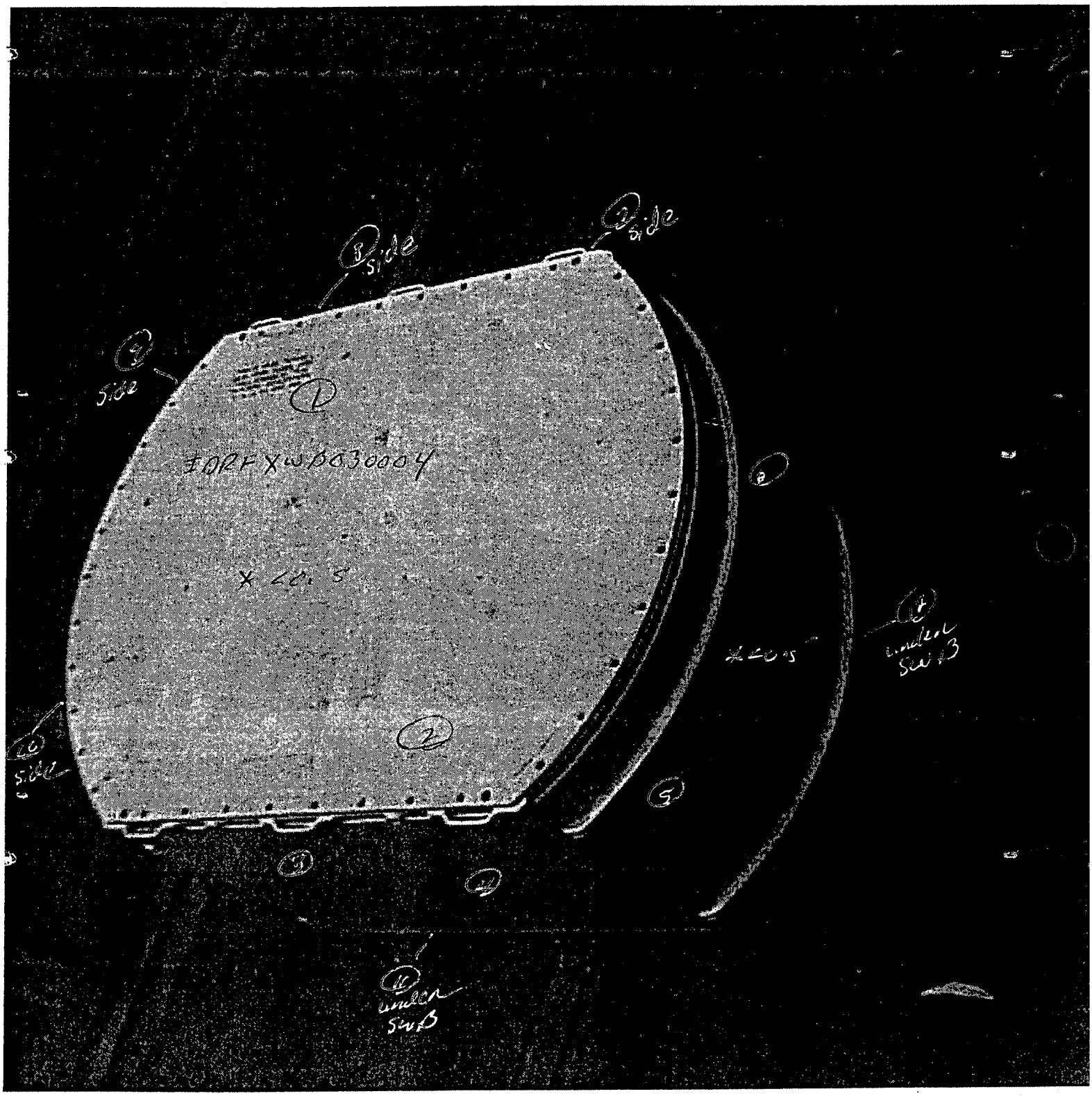
CA	Contamination Area
HCA	High Contamination Area
RA	Radiation Area
HRA	High Radiation Area
VHRA	Very High Radiation Area
RMA	Radioactive Material Area
ARA	Airborne Radioactivity Area
RBA	Radiological Buffer Area
FCA	Fixed Contamination Area
SCA	Soil Contamination Area
URMA	Underground Radioactive Material Area
SOP	Step-Off Pad

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

#	General Area Dose Rate
#@#(cm)	Dose Rate at Distance From Source
*#	Contact Dose Rate
#β / #γ	Beta Corrected / Gamma Dose Rates
α	Alpha
β	Be
γ	G
n	Neutron

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⌂ - Tritium Swipe



1 meter – 20.5 inches
2 meter – 20.5 inches

Tan Smear Report

Batch ID:	smear - 200301311755	**Count Date:**	1/31/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,365	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	SWB SURVEY		

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.30 ± 0.17		**Alpha:**	29.90 ± 0.23	
Beta Rate:	3.90 ± 0.62		**Beta:**	44.28 ± 0.07	

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030131175548-A1	Unknown	-1.00	0.58	15.37	2.48	5.24	21.50
20030131175718-A2	Unknown	-1.00	0.58	15.37	18.29	7.95	21.50
20030131175828-A3	Unknown	-1.00	0.58	15.37	20.55	8.26	21.50
20030131175938-A4	Unknown	2.34	3.39	15.37	0.23	4.73	21.50
20030131180048-A5	Unknown	-1.00	0.58	15.37	20.55	8.26	21.50
20030131180158-A6	Unknown	-1.00	0.58	15.37	31.84	9.68	21.50
20030131180318-A7	Unknown	5.69	4.77	15.37	79.27	14.17	21.50
20030131180428-A8	Unknown	-1.00	0.58	15.37	22.81	8.57	21.50
20030131180538-A9	Unknown	-1.00	0.58	15.37	29.58	9.42	21.50
20030131180648-A10	Unknown	-1.00	0.58	15.37	22.81	8.57	21.50
20030131180759-A11	Unknown	-1.00	0.58	15.37	11.52	6.92	21.50
20030131180909-A12	Unknown	-1.00	0.58	15.37	22.81	8.57	21.50

Reviewed by: _____

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RADIOLOGICAL SURVEY REPORT

BARCODE #

BLDG.: 607	☐ ROUTINE **JOB DESCRIPTION**
AREA/ROOM: Warm Shop	☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP Report Batch #: 5366
RWP #: 3100 7496 02	COMMENTS: Cask #157 Drum's in SWB for
LOG #: 11	Shipment.
DATE: 1-31-03	Alara Task # 29001689 0117
TIME: 1825	All SWB neutron readings = bkd unless noted.

RCT: L. Bird / McKinlay
PRINT/SIGNATURE
Jon Johnston / [signature]

REVIEWED BY: [signature]

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

INSTRUMENTS		
Type	Serial #	Efficiency
		%
		%
		%
Scaler	324920	44.2 %βγ
		22.9 %α
RO-20	802084	
E600	801856	

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	<200/NA	<20/NA		
1-12			See 2/3 5100 printout				

CA Contamination Area
HCA High Contamination Area
RA Radiation Area
HRA High Radiation Area
VHRA Very High Radiation Area
RMA Radioactive Material Area
ARA Airborne Radioactivity Area
RBA Radiological Buffer Area
FCA Fixed Contamination Area
SCA Soil Contamination Area
URMA Underground Radioactive Material Area
SOP Step-Off Pad

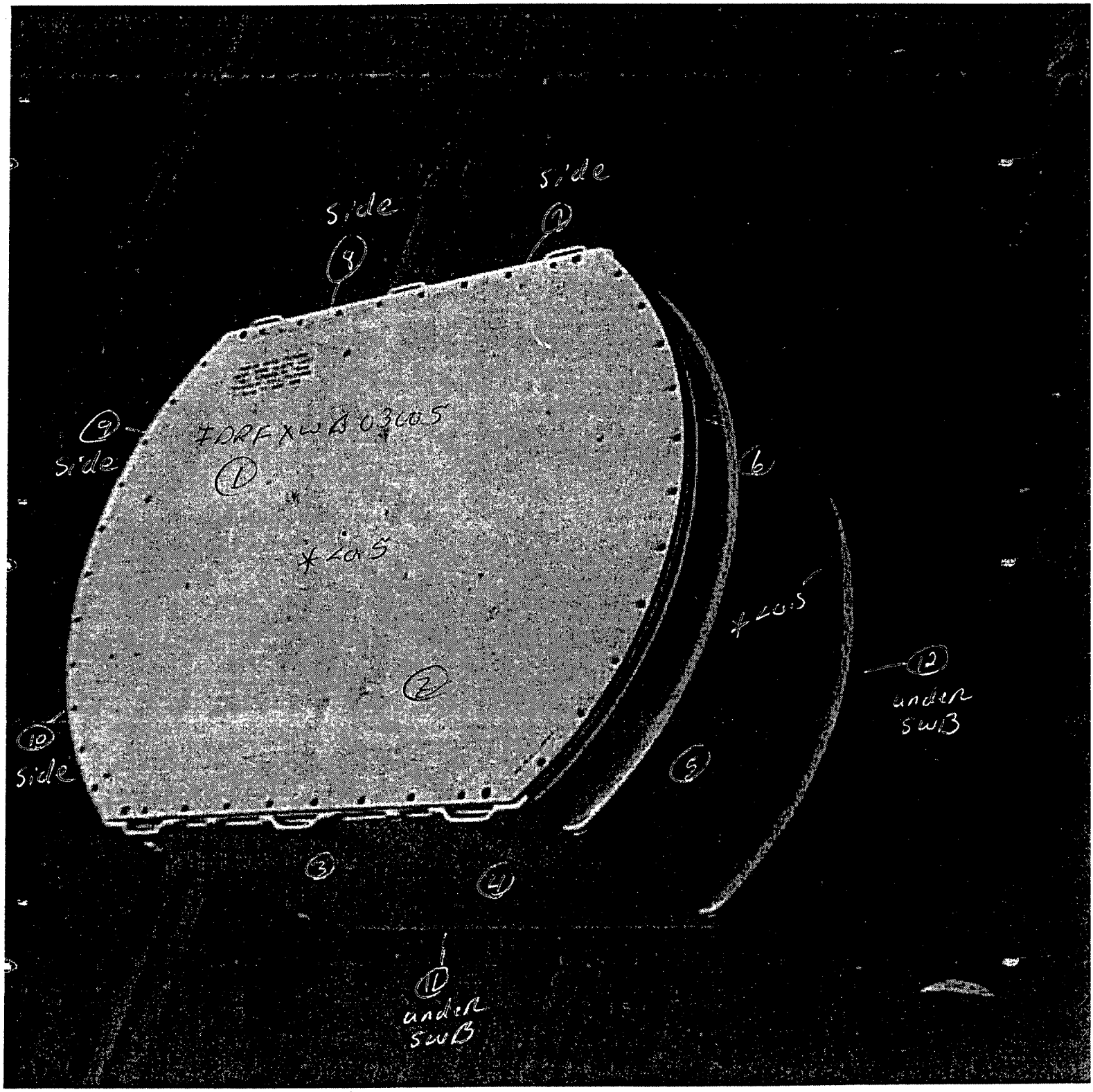
-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

\# General Area Dose Rate
#@#(cm) Dose Rate at Distance From Source
*# Contact Dose Rate
#β / #γ Beta Corrected / Gamma Dose Rates
α Alpha
β E
γ (
n Neutron

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⌂ - Tritium Swipe

A-201



1 meter - <0.5 mR/HR
2 meter - <0.5 mR/HR

Tan Smear Report

Batch ID:	smear - 200301311812	**Count Date:**	1/31/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,366	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	SWB SURVEY		

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.30 ± 0.17		**Alpha:**	29.90 ± 0.23	
Beta Rate:	3.90 ± 0.62		**Beta:**	44.28 ± 0.07	

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030131181249-A1	Unknown	-1.00	0.58	15.37	4.74	5.71	21.50
20030131181419-A2	Unknown	-1.00	0.58	15.37	7.00	6.14	21.50
20030131181530-A3	Unknown	-1.00	0.58	15.37	20.55	8.26	21.50
20030131181640-A4	Unknown	-1.00	0.58	15.37	9.26	6.54	21.50
20030131181750-A5	Unknown	-1.00	0.58	15.37	34.10	9.94	21.50
20030131181900-A6	Unknown	-1.00	0.58	15.37	29.58	9.42	21.50
20030131182020-A7	Unknown	2.34	3.39	15.37	92.82	15.22	21.50
20030131182130-A8	Unknown	-1.00	0.58	15.37	22.81	8.57	21.50
20030131182240-A9	Unknown	-1.00	0.58	15.37	25.07	8.86	21.50
20030131182350-A10	Unknown	2.34	3.39	15.37	18.29	7.95	21.50
20030131182500-A11	Unknown	5.69	4.77	15.37	7.00	6.14	21.50
20030131182610-A12	Unknown	-1.00	0.58	15.37	29.58	9.42	21.50

Reviewed by: _____

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RADIOLOGICAL SURVEY REPORT

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BARCODE #

BLDG.:	607
AREA/ROOM:	Warm shop
RWP #:	3100 7496 02
LOG #:	11
DATE:	1-31-03
TIME:	1825

☐ ROUTINE **JOB DESCRIPTION**
☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP Report Batch #: 578
COMMENTS: Cask #157 Drum's in SWB for shipment
All neutron reading's < 1.0 mrem/hr unless noted.
Alara TASK # 29001689 0117

RCT: J. Bird / McKinlay / L McKinlay
PRINT/SIGNATURE
Jon Johnston /

REVIEWED BY:

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

INSTRUMENTS		
Type	Serial #	Efficiency
		%
		%
		%
Scaler	329920	44.2 %βγ
		22.9 %α
Ro-20	802084	
E600	801850	

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm^2) βγ	SWIPE/SCAN (dpm/100cm^2) α	LAW (dpm) βγ	LAW (dpm) α
*		*	RCM Table 2-2 limits used for this survey.	<200/NA	<20/NA		
1-12			See LB 5100 print out				

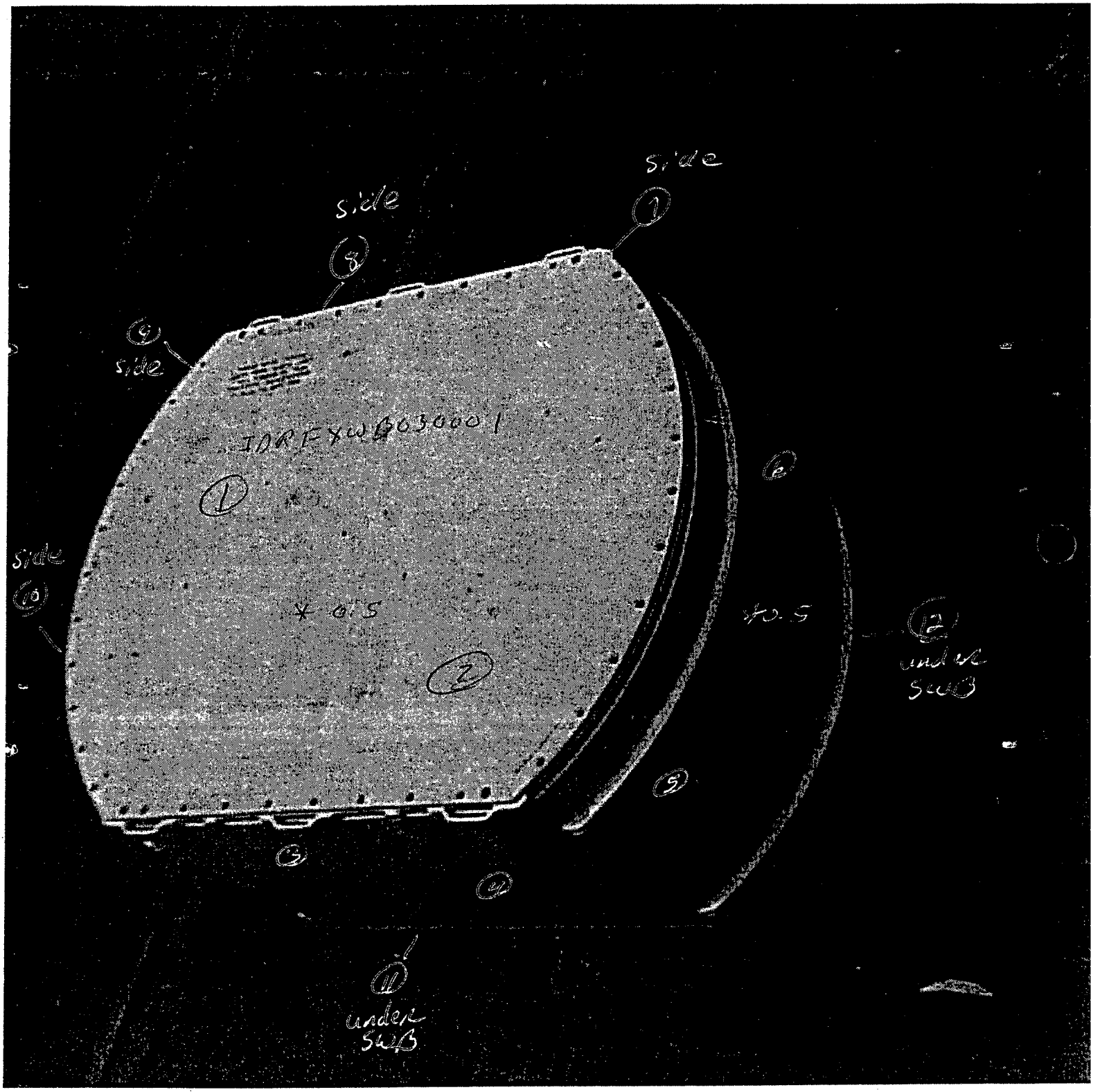
CA Contamination Area
HCA High Contamination Area
RA Radiation Area
HRA High Radiation Area
VHRA Very High Radiation Area
RMA Radioactive Material Area
ARA Airborne Radioactivity Area
RBA Radiological Buffer Area
FCA Fixed Contamination Area
SCA Soil Contamination Area
URMA Underground Radioactive Material Area
SOP Step-Off Pad

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

\# General Area Dose Rate
#@#(cm) Dose Rate at Distance From Source
*# Contact Dose Rate
#β / #γ Beta Corrected / Gamma Dose Rates
α Alpha
β Beta
γ Gamma
n Neutron

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⌂ - Tritium Swipe



1 METER – 20.5 MR/HR
2 METER – 20.5 MR/HR

Tan Smear Report

Batch ID:	smear - 200301311844	**Count Date:**	1/31/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,368	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:			

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.30 ± 0.17		**Alpha:**	29.90 ± 0.23	
Beta Rate:	3.90 ± 0.62		**Beta:**	44.28 ± 0.07	

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Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030131184440-A1	Unknown	-1.00	0.58	15.37	7.00	6.14	21.50
20030131184610-A2	Unknown	-1.00	0.58	15.37	7.00	6.14	21.50
20030131184720-A3	Unknown	-1.00	0.58	15.37	16.03	7.62	21.50
20030131184830-A4	Unknown	-1.00	0.58	15.37	11.52	6.92	21.50
20030131184940-A5	Unknown	-1.00	0.58	15.37	20.55	8.26	21.50
20030131185051-A6	Unknown	-1.00	0.58	15.37	29.58	9.42	21.50
20030131185201-A7	Unknown	-1.00	0.58	15.37	65.72	13.05	21.50
20030131185321-A8	Unknown	2.34	3.39	15.37	16.03	7.62	21.50
20030131185431-A9	Unknown	-1.00	0.58	15.37	25.07	8.86	21.50
20030131185541-A10	Unknown	-1.00	0.58	15.37	18.29	7.95	21.50
20030131185651-A11	Unknown	2.34	3.39	15.37	25.07	8.86	21.50
20030131185801-A12	Unknown	-1.00	0.58	15.37	43.13	10.92	21.50

Reviewed by: _____

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BARCODE #

BLDG.: 607 AREA/ROOM: Workshop RWP #: 3100 7496 02 LOG #: 11 DATE: 1-31-03 TIME: 1825	☐ ROUTINE **JOB DESCRIPTION** ☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP Report Batch # = 5369 COMMENTS: Cask #157 Drums in SWB for Shipment All neutron reading's <1.0 mR/hr unless noted. Alara Task # 3100 1689 0117

RCT: [illegible] / McKinley / L McKinley
PRINT/SIGNATURE
Jon Johnston / [signature]

REVIEWED BY: [signature]

INSTRUMENTS		
Type	Serial #	Efficiency
		%
		%
		%
Scaler	324920	44.2 %βγ
		29.9 %α
Ro-20	500284	
E600	801850	

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm^2) βγ	SWIPE/SCAN (dpm/100cm^2) α	LAW (dpm) βγ	LAW (dpm) α
*		*	RCM Table 2-2 limits used for this survey.	<200/NA	<20/NA		
1-12			See #13 5100 print out				

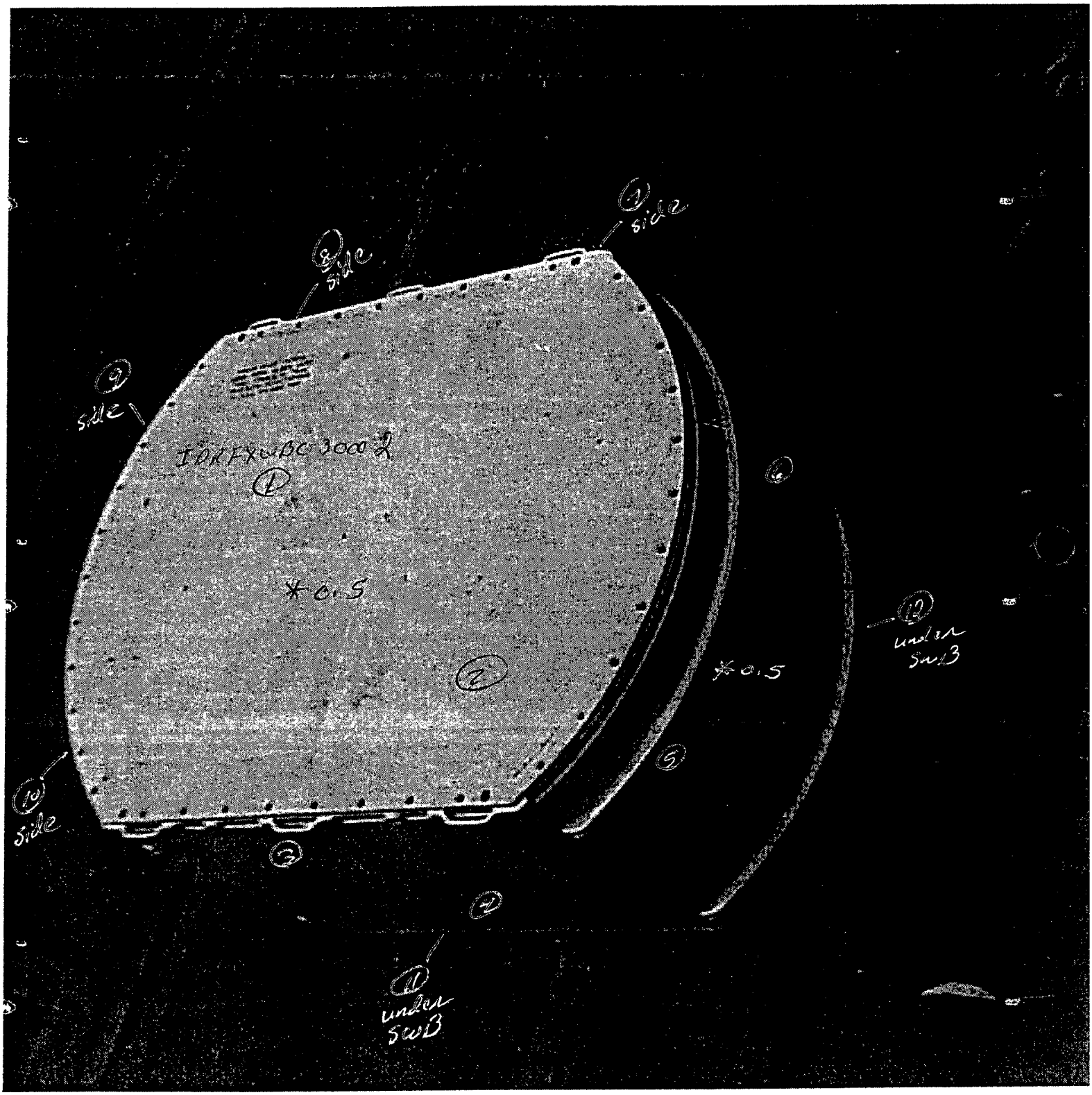
CA	Contamination Area
HCA	High Contamination Area
RA	Radiation Area
HRA	High Radiation Area
VHRA	Very High Radiation Area
RMA	Radioactive Material Area
ARA	Airborne Radioactivity Area
RBA	Radiological Buffer Area
FCA	Fixed Contamination Area
SCA	Soil Contamination Area
URMA	Underground Radioactive Material Area
SOP	Step-Off Pad

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

#	General Area Dose Rate
#@#(cm)	Dose Rate at Distance From Source
*#	Contact Dose Rate
#β / #γ	Beta Corrected / Gamma Dose Rates
α	Alpha
β	Be[ta]
γ	Ga[mma]
n	Neutron

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⌂ - Tritium Swipe



I METER - 20.5 INCHES
J METER - 20.5 INCHES

Tan Smear Report

Batch ID:	smear - 200301311844	**Count Date:**	1/31/03
Group:	B	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,369	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:			

COPY

Background (cpm)				**Efficiency (%)**			
Alpha Rate:	0.30	±	0.17	**Alpha:**	29.90	±	0.23
Beta Rate:	3.90	±	0.62	**Beta:**	44.28	±	0.07

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030131184447-B13 (1)	Unknown	2.34	3.39	15.37	9.26	6.54	21.50
20030131190028-B14 (2)	Unknown	-1.00	0.58	15.37	77.01	13.99	21.50
20030131190138-B15 (3)	Unknown	-1.00	0.58	15.37	11.52	6.92	21.50
20030131190248-B16 (4)	Unknown	-1.00	0.58	15.37	18.29	7.95	21.50
20030131190358-B17 (5)	Unknown	2.34	3.39	15.37	31.84	9.68	21.50
20030131190518-B18 (6)	Unknown	-1.00	0.58	15.37	16.03	7.62	21.50
20030131190628-B19 (7)	Unknown	5.69	4.77	15.37	22.81	8.57	21.50
20030131190738-B20 (8)	Unknown	-1.00	0.58	15.37	25.07	8.86	21.50
20030131190848-B21 (9)	Unknown	-1.00	0.58	15.37	29.58	9.42	21.50
20030131190958-B22 (10)	Unknown	-1.00	0.58	15.37	63.46	12.85	21.50
20030131191108-B23 (11)	Unknown	-1.00	0.58	15.37	18.29	7.95	21.50
20030131191218-B24 (12)	Unknown	-1.00	0.58	15.37	31.84	9.68	21.50

6L
2-3-03

Reviewed by: ______________________

441.45#
10/10/97
Rev. #03

RADIOLOGICAL SURVEY REPORT

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Pg 1 of 2

BARCODE #

BLDG.: TAN 607 Hot Shop AREA/ROOM: Trupact Tent RWP #: 3100 2510 02 LOG #: 7 DATE: 11/30/03 TIME: 1836	☐ ROUTINE **JOB DESCRIPTION** ☑ NON ROUTINE (SPECIFY) ☐ FOLLOW UP COMMENTS: General Area Dose Rate measured at waist level Surveys taken during payload disassembly Report Batch # 5353

RCT: J. Ely / J. Ely, L McKinlay / L McKinlay, E Lang / E Lang
PRINT/SIGNATURE

REVIEWED BY: [signature]

INSTRUMENTS		
Type	Serial #	Efficiency
2A	800147	10 %
		%
		%
Scaler	324920	44.23 %βγ
		29.90 %α
RO-20	801780	
electra	801430	10 20 α

SURVEY DATA AND LEGEND

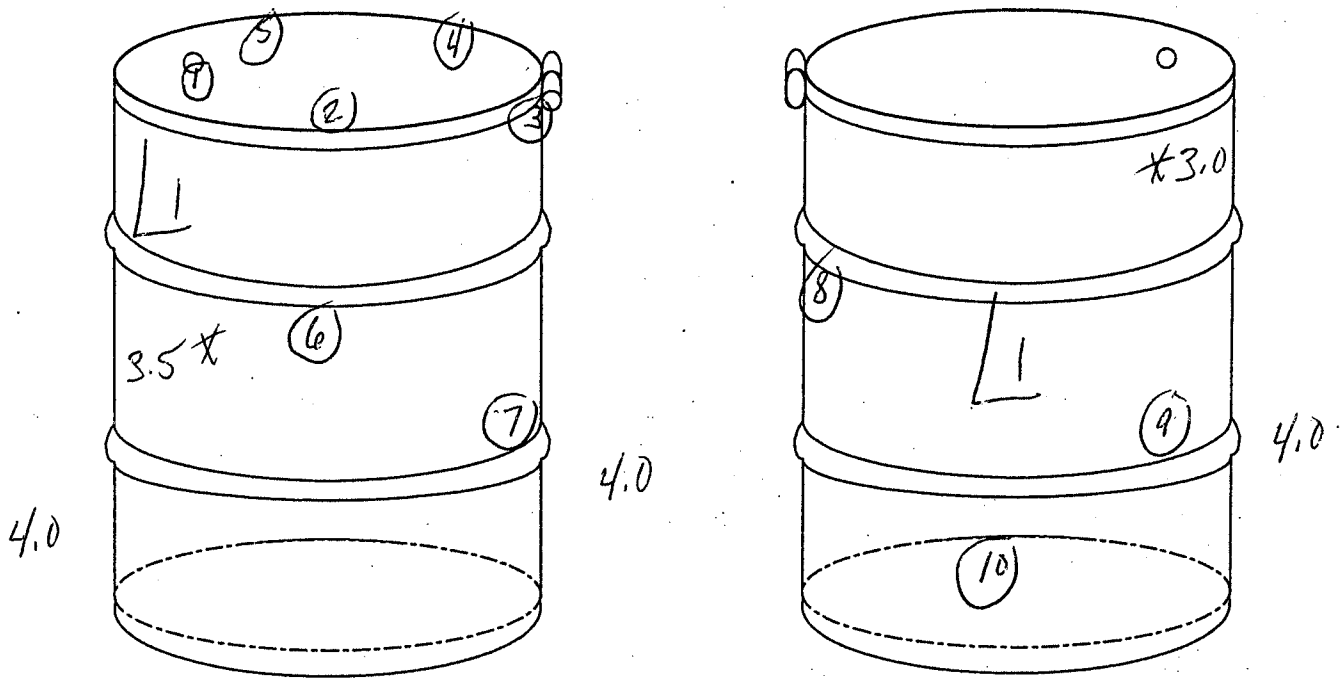
ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

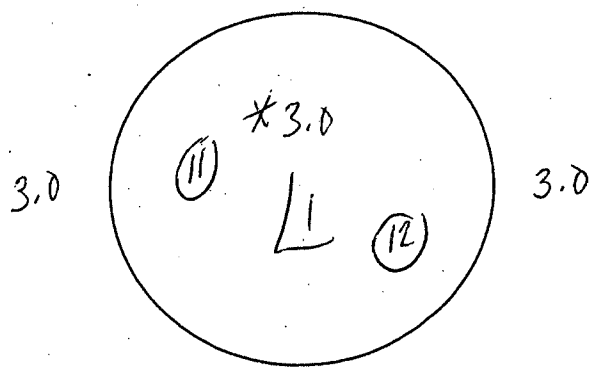
SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN ($dpm/100cm^2$) βγ	SWIPE/SCAN ($dpm/100cm^2$) α	LAW (dpm) βγ	LAW (dpm) α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		
1-12			See LB5100 attachment for survey results			~~<1000~~	~~<20~~
	1					<1000	<20

CA	Contamination Area	-x—x-	Radiological Barrier
HCA	High Contamination Area		
RA	Radiation Area		ALL dose rates are in mrem/hr, unless otherwise noted.
HRA	High Radiation Area		
VHRA	Very High Radiation Area	#	General Area Dose Rate
RMA	Radioactive Material Area	#@#(cm)	Dose Rate at Distance From Source
ARA	Airborne Radioactivity Area	*#	Contact Dose Rate
RBA	Radiological Buffer Area	#β / #γ	Beta Corrected / Gamma Dose Rates
FCA	Fixed Contamination Area	α	Alpha
SCA	Soil Contamination Area	β	
URMA	Underground Radioactive Material Area	γ	Neutron

☐ - Direct Scan
○ - Swipe (Smear)
∟ - Large Area Wipe (LAW)
△ - Air Sample
⌂ - Tritium Swipe

Drum # 11





Bottom

Tan Smear Report

Batch ID:	smear - 200301301800	**Count Date:**	1/30/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,353	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	TRUPACT 157 DRUM #11, SMEARS 11 & 12 ARE CLOTH SMEARS.		

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.20 ± 0.14		**Alpha:**	29.90 ± 0.23	
Beta Rate:	5.50 ± 0.74		**Beta:**	44.28 ± 0.07	

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)	
20030130180026-A1	Unknown	-0.67	0.47	14.21	1.13	5.78	24.39	
20030130180156-A2	Unknown	6.02	4.75	14.21	7.90	6.98	24.39	
20030130180306-A3	Unknown	-0.67	0.47	14.21	19.20	8.61	24.39	
20030130180416-A4	Unknown	-0.67	0.47	14.21	-3.39	4.82	24.39	
20030130180526-A5	Unknown	6.02	4.75	14.21	12.42	7.68	24.39	
20030130180636-A6	Unknown	-0.67	0.47	14.21	35.00	10.48	24.39	
20030130180756-A7	Unknown	-0.67	0.47	14.21	86.95	15.07	24.39	
20030130180906-A8	Unknown	-0.67	0.47	14.21	19.20	8.61	24.39	
20030130181017-A9	Unknown	-0.67	0.47	14.21	23.71	9.19	24.39	
20030130181127-A10	Unknown	2.68	3.38	14.21	19.20	8.61	24.39	
~~20030130181237-A11~~	~~Unknown~~	~~-0.67~~	~~0.47~~	~~31.95~~	~~142.10~~	~~30.35~~	~~44.88~~	6 cc
20030130181237-A11	Unknown	-0.67	0.47	14.21	161.47	19.89	24.39	1-31-03
~~20030130181237-A11~~	~~Unknown~~	~~-0.67~~	~~0.47~~	~~15.76~~	~~159.52~~	~~21.07~~	~~26.32~~	
20030130181347-A12	Unknown	-0.67	0.47	14.21	109.53	16.68	24.39	

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RADIOLOGICAL SURVEY REPORT

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BARCODE #

BLDG.: 607
AREA/ROOM: Hot Shop
RWP #: 31002496 03
LOG #: 3
DATE: 1/31/03
TIME: 1105

☐ ROUTINE **JOB DESCRIPTION** Batch Key # 5358
☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP
COMMENTS: Release Survey TO allow Category "A" Clothing in Extended RBA
Smear #16+17 not Taken.

RCT: F. Bush / T Bush / R Galow / R Johnson REVIEWED BY:
PRINT/SIGNATURE

INSTRUMENTS		
Type	Serial #	Efficiency
2A	501260	10 %
177-L	502224	10 %
177-L	501973	10 %
Scaler		%βγ
		%α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	<1000/μA	<20/μA		

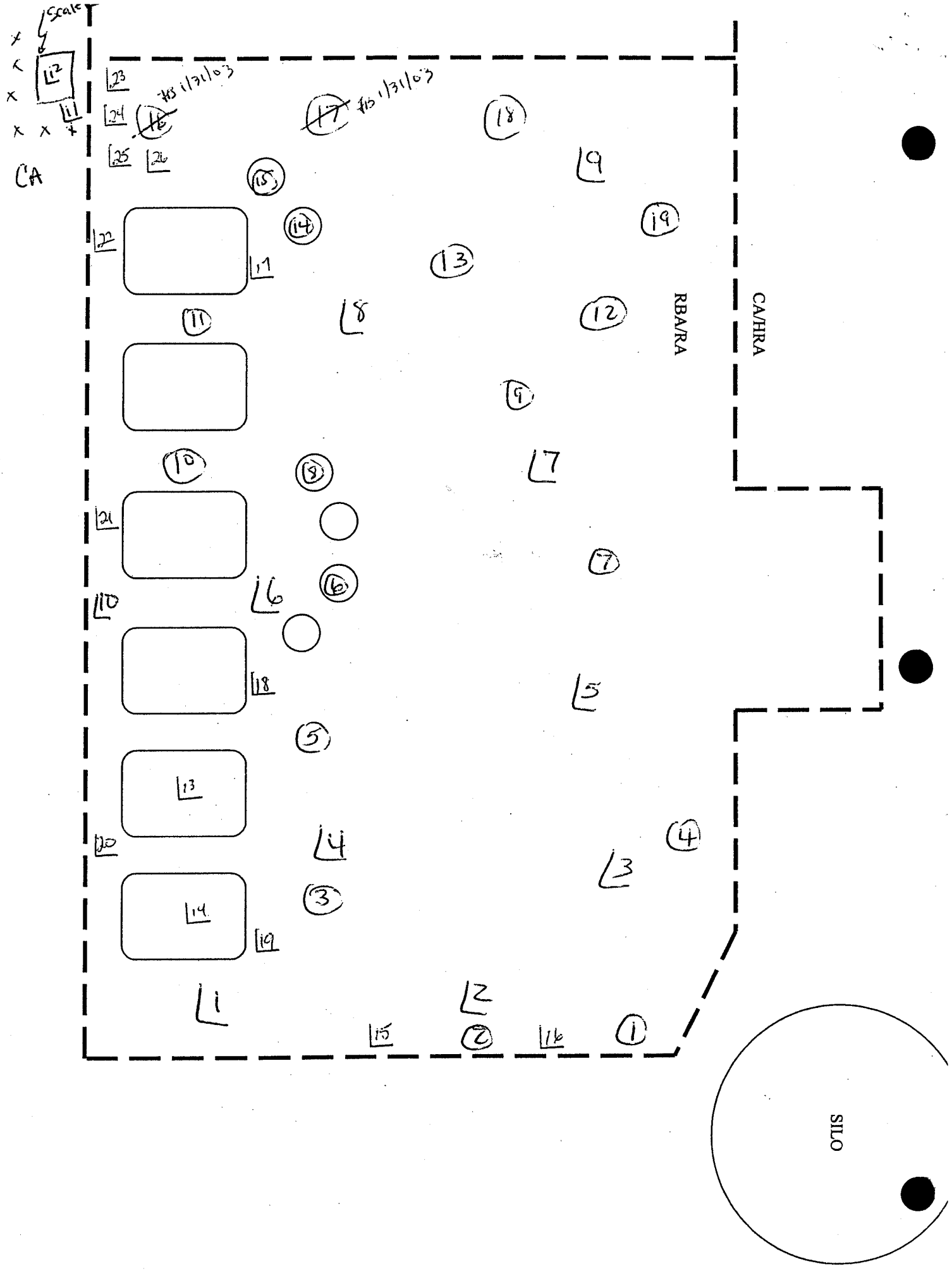
CA Contamination Area
HCA High Contamination Area
RA Radiation Area
HRA High Radiation Area
VHRA Very High Radiation Area
RMA Radioactive Material Area
ARA Airborne Radioactivity Area
RBA Radiological Buffer Area
FCA Fixed Contamination Area
SCA Soil Contamination Area
URMA Underground Radioactive Material Area
SOP Step-Off Pad

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

General Area Dose Rate
#@#(cm) Dose Rate at Distance From Source
*# Contact Dose Rate
#β / #γ Beta Corrected / Gamma Dose Rates
α Alpha
β Be
γ G A-217
n Neutron

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⌂ - Tritium Swipe


Scale
CA
RBA/RA
CA/HRA
SILO

Tan Smear Report

COPY

Batch ID:	smear - 200301311024	**Count Date:**	1/31/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,358	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	CLEARING HOT SHOP EXTENDED RBA		

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.30 ± 0.17		**Alpha:**	29.90 ± 0.23	
Beta Rate:	3.90 ± 0.62		**Beta:**	44.28 ± 0.07	

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030131102428-A1	Unknown	-1.00	0.58	15.37	11.52	6.92	21.50
20030131102559-A2	Unknown	2.34	3.39	15.37	25.07	8.86	21.50
20030131102709-A3	Unknown	2.34	3.39	15.37	18.29	7.95	21.50
20030131102819-A4	Unknown	12.38	6.72	15.37	2.48	5.24	21.50
20030131102929-A5	Unknown	2.34	3.39	15.37	13.78	7.28	21.50
20030131103039-A6	Unknown	-1.00	0.58	15.37	34.10	9.94	21.50
20030131103149-A7	Unknown	2.34	3.39	15.37	74.75	13.81	21.50
20030131103309-A8	Unknown	2.34	3.39	15.37	36.36	10.20	21.50
20030131103419-A9	Unknown	-1.00	0.58	15.37	31.84	9.68	21.50
20030131103529-A10	Unknown	-1.00	0.58	15.37	18.29	7.95	21.50
20030131103639-A11	Unknown	-1.00	0.58	15.37	29.58	9.42	21.50
20030131103749-A12	Unknown	-1.00	0.58	15.37	34.10	9.94	21.50
20030131103859-A13	Unknown	2.34	3.39	15.37	16.03	7.62	21.50
20030131104009-A14	Unknown	-1.00	0.58	15.37	95.08	15.38	21.50
20030131104130-A15	Unknown	-1.00	0.58	15.37	27.33	9.14	21.50
20030131104240-A18	Unknown	-1.00	0.58	15.37	18.29	7.95	21.50
20030131104350-A19	Unknown	5.69	4.77	15.37	38.62	10.44	21.50

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INSTRUMENTS		
Type	Serial #	Efficiency
		%
		%
		%
Scaler	324920	44.28 %βγ
		29.90 %α
Ro-20	81780	

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	<2001 NA	<201 N.A		
1-20			See 413 5100 print out				

CA	Contamination Area	-x—x-	Radiological Barrier	□ -	Direct Scan
HCA	High Contamination Area				
RA	Radiation Area	ALL dose rates are in mrem/hr, unless otherwise noted.		○ -	Swipe (Smear)
HRA	High Radiation Area				
VHRA	Very High Radiation Area	#	General Area Dose Rate	L -	Large Area Wipe (LAW)
RMA	Radioactive Material Area	#@#(cm)	Dose Rate at Distance From Source		
ARA	Airborne Radioactivity Area	*#	Contact Dose Rate	△ -	Air Sample
RBA	Radiological Buffer Area	#β / #γ	Beta Corrected / Gamma Dose Rates		
FCA	Fixed Contamination Area	α	Alpha	⬠ -	Tritium Swipe
SCA	Soil Contamination Area	β	Beta		
URMA	Underground Radioactive Material Area	γ	Gamma		
SOP	Step-Off Pad	n	Neutron		

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RADIOLOGICAL SURVEY REPORT

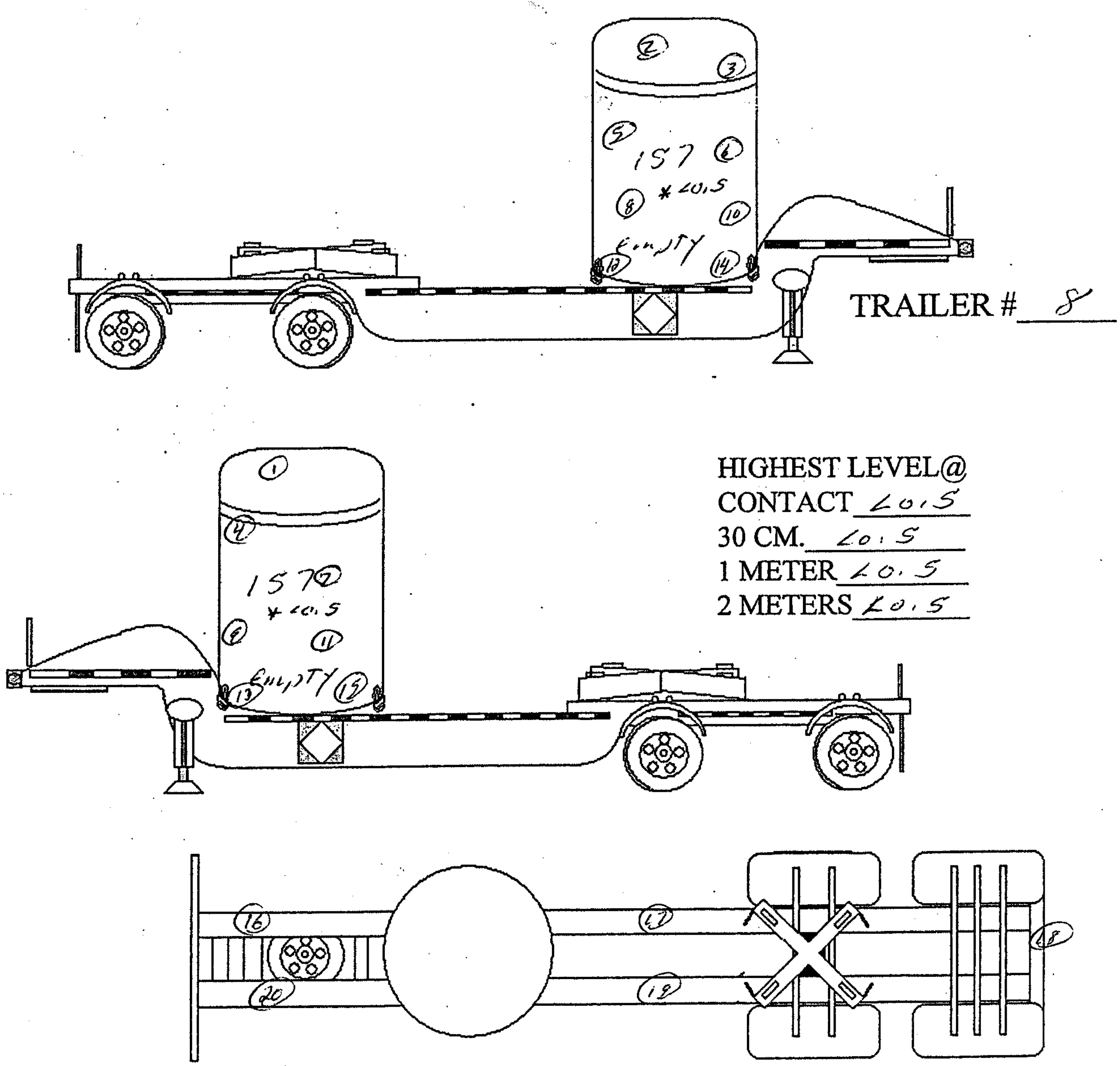
BARCODE #

BLDG.: West of 668	☐ ROUTINE **JOB DESCRIPTION**
AREA/ROOM: TAN	☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP Report Butte #5375
RWP #: NA	COMMENTS: Outgoing shipment Trailer and cask
LOG #: 5	#157 From TAN. Cask is empty no ICV or
DATE: 2-3-03	drums.
TIME: 1205	

RCT: [signatures] / L. McKinlay · F. Bush / F. Bush REVIEWED BY: [signature]
PRINT/SIGNATURE

TRUPACT

CASK # 157



HIGHEST LEVEL@
CONTACT <0.5
30 CM. <0.5
1 METER <0.5
2 METERS <0.5

Tan Smear Report

Batch ID:	smear - 200302031057	**Count Date:**	2/3/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,375	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	OCA TRUPACT 157 SHIPMENT SURVEY.		

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.10 ± 0.10		**Alpha:**	29.90 ± 0.23	
Beta Rate:	5.40 ± 0.73		**Beta:**	44.28 ± 0.07	

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Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030203105746-A1	Unknown	-0.33	0.33	12.70	8.13	6.98	24.22
20030203105916-A2	Unknown	3.01	3.36	12.70	3.61	6.20	24.22
20030203110026-A3	Unknown	6.35	4.74	12.70	14.91	8.00	24.22
20030203110136-A4	Unknown	3.01	3.36	12.70	5.87	6.60	24.22
20030203110246-A5	Unknown	-0.33	0.33	12.70	21.68	8.90	24.22
20030203110356-A6	Unknown	-0.33	0.33	12.70	44.26	11.41	24.22
20030203110516-A7	Unknown	6.35	4.74	12.70	57.81	12.68	24.22
20030203110627-A8	Unknown	-0.33	0.33	12.70	12.65	7.67	24.22
20030203110737-A9	Unknown	3.01	3.36	12.70	14.91	8.00	24.22
20030203110847-A10	Unknown	3.01	3.36	12.70	12.65	7.67	24.22
20030203110957-A11	Unknown	-0.33	0.33	12.70	12.65	7.67	24.22
20030203111107-A12	Unknown	-0.33	0.33	12.70	19.42	8.61	24.22
20030203111217-A13	Unknown	-0.33	0.33	12.70	14.91	8.00	24.22
20030203111327-A14	Unknown	6.35	4.74	12.70	100.72	16.06	24.22
20030203111447-A15	Unknown	-0.33	0.33	12.70	5.87	6.60	24.22
20030203111557-A16	Unknown	6.35	4.74	12.70	8.13	6.98	24.22
20030203111707-A17	Unknown	-0.33	0.33	12.70	37.49	10.72	24.22
20030203111817-A18	Unknown	3.01	3.36	12.70	5.87	6.60	24.22
20030203111927-A19	Unknown	6.35	4.74	12.70	23.94	9.18	24.22
20030203112037-A20	Unknown	9.70	5.80	12.70	26.20	9.46	24.22

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RADIOLOGICAL SURVEY REPORT

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BARCODE #

BLDG.: HOT SHOP/EXTENSION
AREA/ROOM: TRUPACT FLOOR PLAN
RWP #: 31002496 02
LOG #: 2
DATE: 2/3/03
TIME: 0935

☐ ROUTINE **JOB DESCRIPTION**
☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP

COMMENTS: ~~General Area Dose Rate measured at waist level~~ Report Beta (#5373 GLC 2-3-03
Contamination Survey to Clear RBA for WORK.

RCT: F. Bush / F Bush
PRINT/SIGNATURE

REVIEWED BY:

INSTRUMENTS		
Type	Serial #	Efficiency
2A	301260	10 %
		%
		%
Scaler	324920	44.28 %βγ
		29.90 %α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		

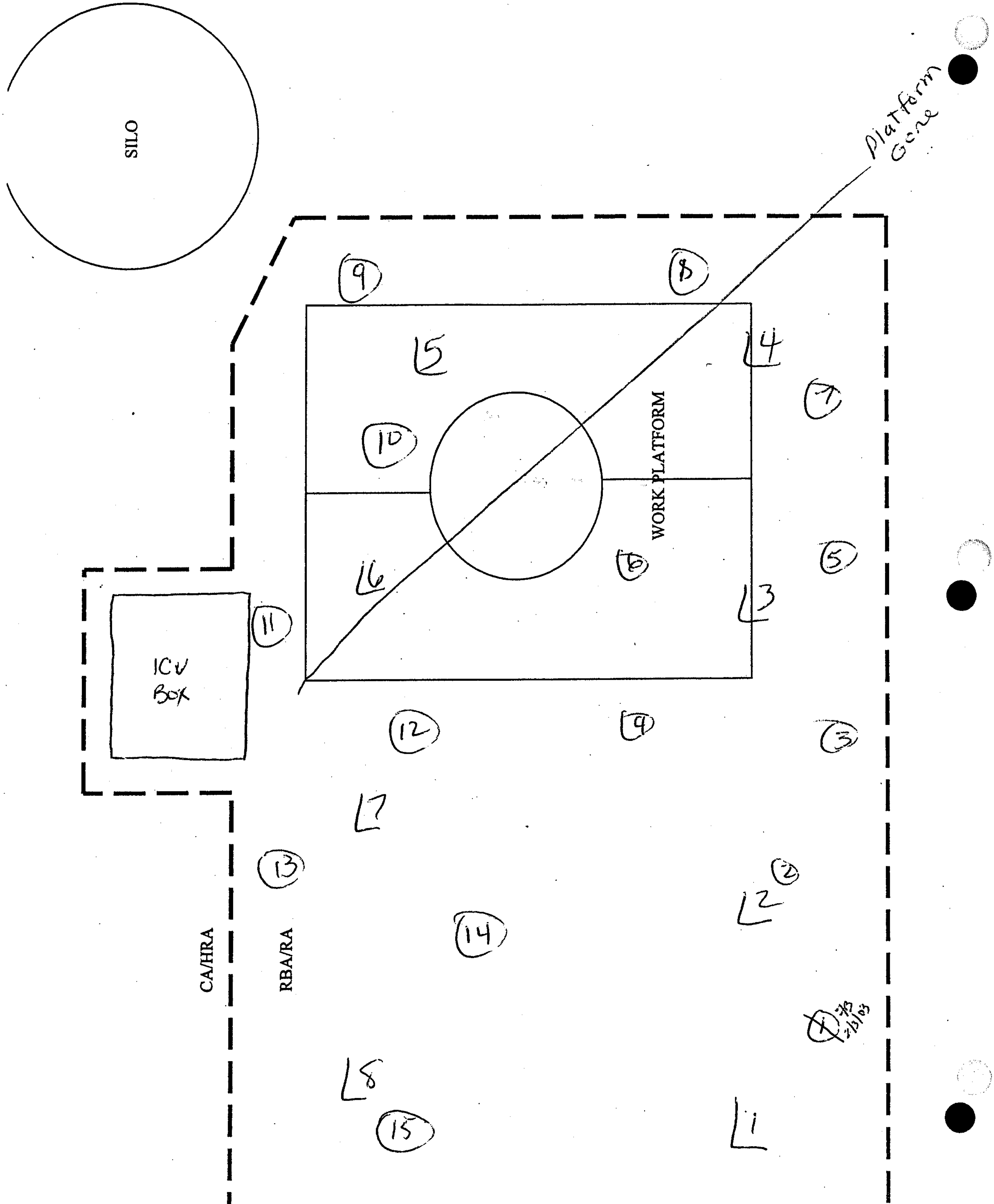
CA Contamination Area
HCA High Contamination Area
RA Radiation Area
HRA High Radiation Area
VHRA Very High Radiation Area
RMA Radioactive Material Area
ARA Airborne Radioactivity Area
RBA Radiological Buffer Area
FCA Fixed Contamination Area
SCA Soil Contamination Area

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

General Area Dose Rate
#@#(cm) Dose Rate at Distance From Source
*# Contact Dose Rate
#β / #γ B ed / Gamma Dose Rates
α A A-225
R Beta

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⬡ - Tritium Swipe


SILO
WORK PLATFORM
ICV Box
Platform Gone
CA/HRA
RBA/RA

Tan Smear Report

:h ID:	smear - 200302030902	**Count Date:**	2/3/03
up:	A	**Count Minutes:**	1.0
ice:	LB5100 #324920	**Count Mode:**	Simultaneous
:h Key:	5,373	**Operating Volts:**	1320
cted Geometry:	1/4" Stainless Steel		
ey Location:	CLEARING RBA EXTENSION INTO HOT SHOP		

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.10 ± 0.10		**Alpha:**	29.90 ± 0.23	
Beta Rate:	5.40 ± 0.73		**Beta:**	44.28 ± 0.07	

e ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
A-227							
0239-A2	Unknown	-0.33	0.33	12.70	21.68	8.90	24.22
0409-A3	Unknown	3.01	3.36	12.70	-5.42	4.25	24.22
203090519-A4	Unknown	-0.33	0.33	12.70	5.87	6.60	24.22
203090629-A5	Unknown	-0.33	0.33	12.70	17.16	8.31	24.22
203090739-A6	Unknown	3.01	3.36	12.70	44.26	11.41	24.22
203090849-A7	Unknown	-0.33	0.33	12.70	73.62	14.02	24.22
203091009-A8	Unknown	-0.33	0.33	12.70	19.42	8.61	24.22
203091120-A9	Unknown	3.01	3.36	12.70	35.23	10.48	24.22
203091230-A10	Unknown	-0.33	0.33	12.70	12.65	7.67	24.22
203091340-A11	Unknown	3.01	3.36	12.70	19.42	8.61	24.22
203091450-A12	Unknown	-0.33	0.33	12.70	12.65	7.67	24.22
203091600-A13	Unknown	3.01	3.36	12.70	1.36	5.78	24.22
203091710-A14	Unknown	3.01	3.36	12.70	107.50	16.53	24.22
203091820-A15	Unknown	-0.33	0.33	12.70	3.61	6.20	24.22

ewed by: _____

COPY

441.45#
10/10/97
Rev. #03

RADIOLOGICAL SURVEY REPORT

COPY

BARCODE #

BLDG.: 607	☑ ROUTINE **JOB DESCRIPTION**
AREA/ROOM: Hotshop 101	☐ NON ROUTINE (SPECIFY) ☐ FOLLOW UP
RWP #: 31009623	COMMENTS: General Area Dose Rate measured at waist level
LOG #: 5	Tent Payload Area.
DATE: 2-4-03	Report Batch # 5374
TIME: 1100	

RCT: E. Lang / E. Lang PRINT/SIGNATURE REVIEWED BY: [signature]

Page 1 of 3

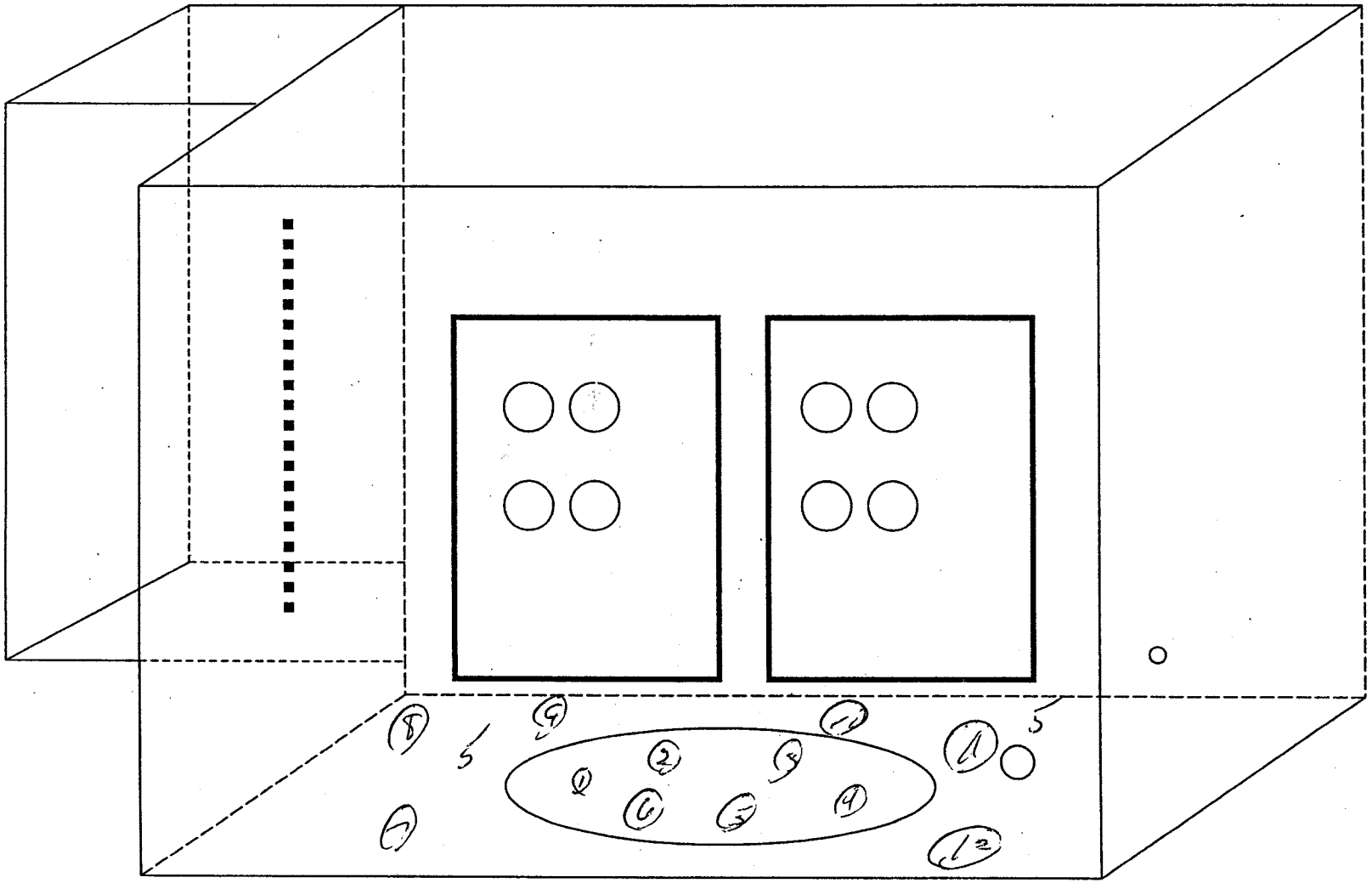
INSTRUMENTS		
Type	Serial #	Efficiency
B50-50	801942	NA %
		%
		%
Scaler	324920	42 %βγ
		29 %α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm^2) βγ	SWIPE/SCAN (dpm/100cm^2) α	LAW (dpm) βγ	LAW (dpm) α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		
			See LB5100 Printouts				

CA	Contamination Area	-x—x-	Radiological Barrier	☐ -	Direct Scan
HCA	High Contamination Area			◯ -	Swipe (Smear)
RA	Radiation Area		ALL dose rates are in mrem/hr, unless otherwise noted.	L -	Large Area Wipe (LAW)
HRA	High Radiation Area			△ -	Air Sample
VHRA	Very High Radiation Area	#	General Area Dose Rate	⌂ -	Tritium Swipe
RMA	Radioactive Material Area	#@#(cm)	Dose Rate at Distance From Source		
ARA	Airborne Radioactivity Area	*#	Contact Dose Rate		
RBA	Radiological Buffer Area	#β / #γ	Beta Corrected / Gamma Dose Rates		
FCA	Fixed Contamination Area	α	Alpha		
SCA	Soil Contamination Area	β	E		
URMA	Underground Radioactive Material Area	γ	G		



Payload Room

Tan Smear Report

Batch ID:	smear - 200302041059	**Count Date:**	2/4/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,394	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	TENT TURNTABLE & AREA		

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.30 ± 0.17		**Alpha:**	29.90 ± 0.23	
Beta Rate:	5.30 ± 0.73		**Beta:**	44.28 ± 0.07	

COPY

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)	
20030204110001-A1	Unknown	-1.00	0.58	15.37	58.04	12.68	24.05	Turn table
20030204110132-A2	Unknown	-1.00	0.58	15.37	58.04	12.68	24.05	"
20030204110242-A3	Unknown	-1.00	0.58	15.37	46.75	11.63	24.05	"
~~20030204110352-A4~~	~~Unknown~~	~~-1.00~~	~~0.58~~	~~208.04~~	~~-11.97~~	~~1.64~~	~~198.91~~	EL 2-4-03
20030204110352-A4	Unknown	-1.00	0.58	15.37	39.97	10.96	24.05	"
~~20030204110352-A4~~	~~Unknown~~	~~-1.00~~	~~0.58~~	~~33.78~~	~~17.75~~	~~13.39~~	~~44.35~~	EL 2-4-03
20030204110502-A5	Unknown	-1.00	0.58	15.37	76.11	14.20	24.05	"
20030204110612-A6	Unknown	-1.00	0.58	15.37	94.17	15.57	24.05	"
20030204110732-A7	Unknown	-1.00	0.58	15.37	134.82	18.28	24.05	Tent Floor
20030204110842-A8	Unknown	2.34	3.39	15.37	53.52	12.27	24.05	"
20030204110952-A9	Unknown	-1.00	0.58	15.37	78.37	14.38	24.05	"
20030204111102-A10	Unknown	2.34	3.39	15.37	28.68	9.72	24.05	"
20030204111212-A11	Unknown	-1.00	0.58	15.37	98.69	15.89	24.05	"
20030204111322-A12	Unknown	-1.00	0.58	15.37	62.56	13.08	24.05	"

Reviewed by: _____

Tan Smear Report

Batch ID:	smear - 200302041210	**Count Date:**	2/4/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,396	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	TENT TURNTABLE AND AREA. RE-COUNT OF SMEAR # 4		

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.30 ± 0.17		**Alpha:**	29.90 ± 0.23	
Beta Rate:	5.30 ± 0.73		**Beta:**	44.28 ± 0.07	

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030204121025-A4	Unknown	-1.00	0.58	15.37	51.27	12.06	24.05

Reviewed by: _____

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RADIOLOGICAL SURVEY REPORT

COPY

BARCODE #

BLDG.: 607
AREA/ROOM: extention
RWP #: 3100 2496 02
LOG #: 8
DATE: 2-3-03
TIME: 1550

☐ ROUTINE **JOB DESCRIPTION**
☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP Report Batch # 5322
COMMENTS: loaded Sw3 with cask # 157 drum's
All neutron reading's < 1 mrem/hr unless noted.
Alara TASK # 2900 1639 0117

RCT: L. Bird / Jones / L McKinlay / [signatures] PRINT/SIGNATURE
Jon Johnston / [signature]

REVIEWED BY: [signature]

INSTRUMENTS		
Type	Serial #	Efficiency
2A	800147	10 %
		%
		%
Scaler	324920	44.28 %βγ
		29.9 %α
Ro-20	802084	
E600	801850	

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm^2) βγ	SWIPE/SCAN (dpm/100cm^2) α	LAW (dpm) βγ	LAW (dpm) α
*		*	RCM Table 2-2 limits used for this survey.	<200/NA	<20/NA		
1-12			See LB 5100 printout				
	1-3		See map				

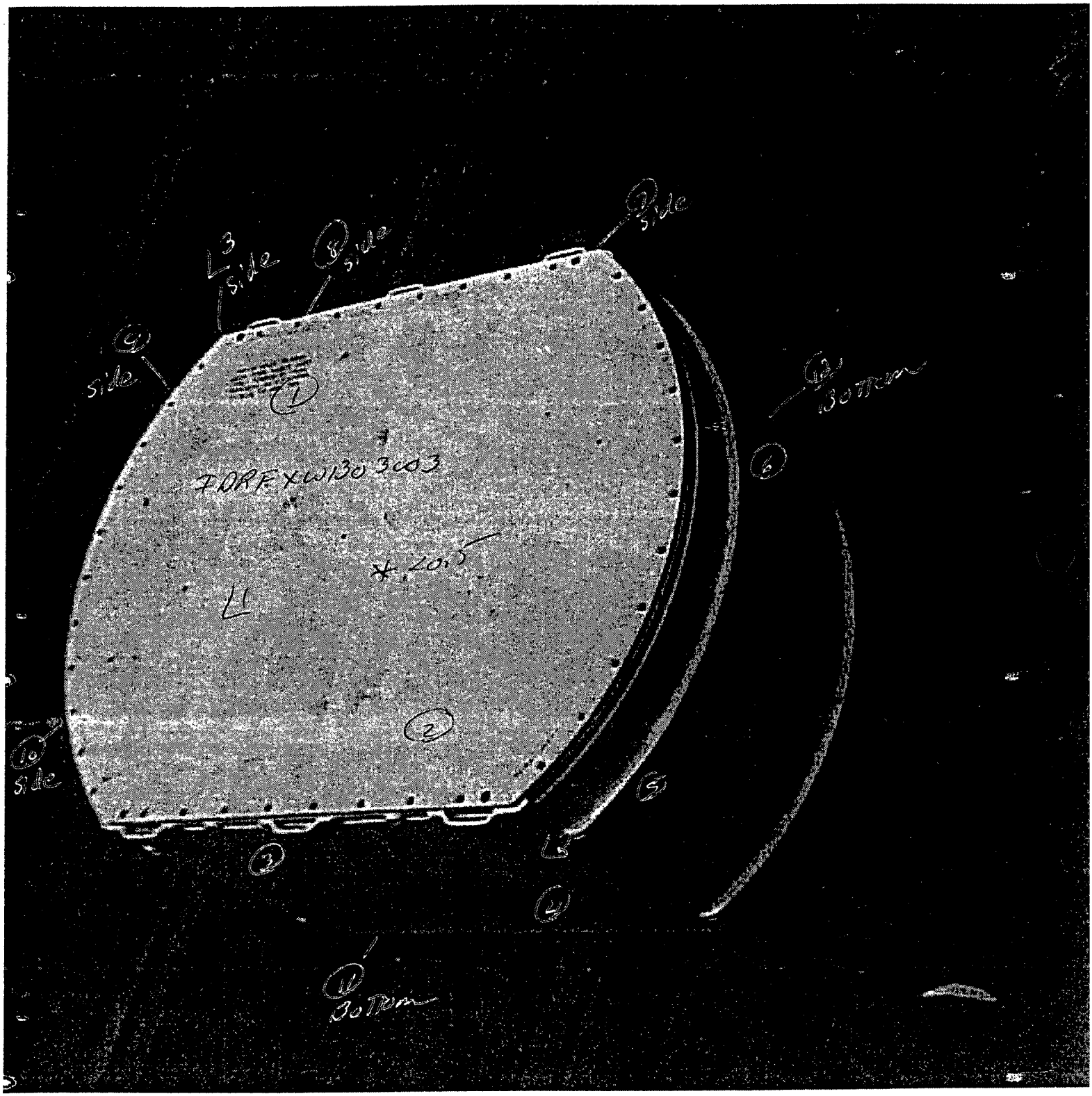
CA Contamination Area
HCA High Contamination Area
RA Radiation Area
HRA High Radiation Area
VHRA Very High Radiation Area
RMA Radioactive Material Area
ARA Airborne Radioactivity Area
RBA Radiological Buffer Area
FCA Fixed Contamination Area
SCA Soil Contamination Area
URMA Underground Radioactive Material Area
SOP Step Off Pad

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

\# General Area Dose Rate
#@#(cm) Dose Rate at Distance From Source
*# Contact Dose Rate
#β / #γ Beta Corrected / Gamma Dose Rates
α Alpha
β Beta
γ Gamma
n Neutron

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⌂ - Tritium Swipe



1 METER – ±0.5 mm/m

2 METER – ±0.5 mm/m

Tan Smear Report

COPY

Batch ID:	smear - 200302031514	**Count Date:**	2/3/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,377	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	SWB SURVEY		

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.10 ± 0.10		**Alpha:**	29.90 ± 0.23	
Beta Rate:	5.40 ± 0.73		**Beta:**	44.28 ± 0.07	

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030203151439-A1	Unknown	-0.33	0.33	12.70	8.13	6.98	24.22
20030203151610-A2	Unknown	3.01	3.36	12.70	3.61	6.20	24.22
20030203151720-A3	Unknown	-0.33	0.33	12.70	5.87	6.60	24.22
20030203151830-A4	Unknown	3.01	3.36	12.70	3.61	6.20	24.22
20030203151940-A5	Unknown	-0.33	0.33	12.70	19.42	8.61	24.22
20030203152050-A6	Unknown	-0.33	0.33	12.70	12.65	7.67	24.22
20030203152210-A7	Unknown	-0.33	0.33	12.70	62.33	13.08	24.22
20030203152320-A8	Unknown	-0.33	0.33	12.70	26.20	9.46	24.22
20030203152430-A9	Unknown	-0.33	0.33	12.70	19.42	8.61	24.22
20030203152540-A10	Unknown	3.01	3.36	12.70	30.71	9.98	24.22
20030203152650-A11	Unknown	-0.33	0.33	12.70	28.46	9.72	24.22
20030203152800-A12	Unknown	-0.33	0.33	12.70	17.16	8.31	24.22

Reviewed by: _____

COPY

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RADIOLOGICAL SURVEY REPORT

BARCODE #

BLDG.: 607	☐ ROUTINE **JOB DESCRIPTION**
AREA/ROOM: extrusion	☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP Report Batch # 5378
RWP #: 3100 2496 02	COMMENTS: handled SW13 with cask #157 drums
LOG #: 8	
DATE: 2-3-03	All neutron reading's <1.0 mR/Hr unless noted.
TIME: 1550	Alara TASK # 2900 1684 0117

RCT: R. Bird / McKinlay / L McKinlay / Jon Johnston
PRINT/SIGNATURE

REVIEWED BY: [signature]

INSTRUMENTS		
Type	Serial #	Efficiency
2A	800147	10 %
		%
		%
Scaler	324920	44.28 %βγ
		29.9 %α
RO-20	802084	
E600	501850	

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	<200/NA	<20/NA		
1-12			See L B 5100 printout.				
	1-3		See map				

CA	Contamination Area
HCA	High Contamination Area
RA	Radiation Area
HRA	High Radiation Area
VHRA	Very High Radiation Area
RMA	Radioactive Material Area
ARA	Airborne Radioactivity Area
RBA	Radiological Buffer Area
FCA	Fixed Contamination Area
SCA	Soil Contamination Area
URMA	Underground Radioactive Material Area
SOP	Step-Off Pad

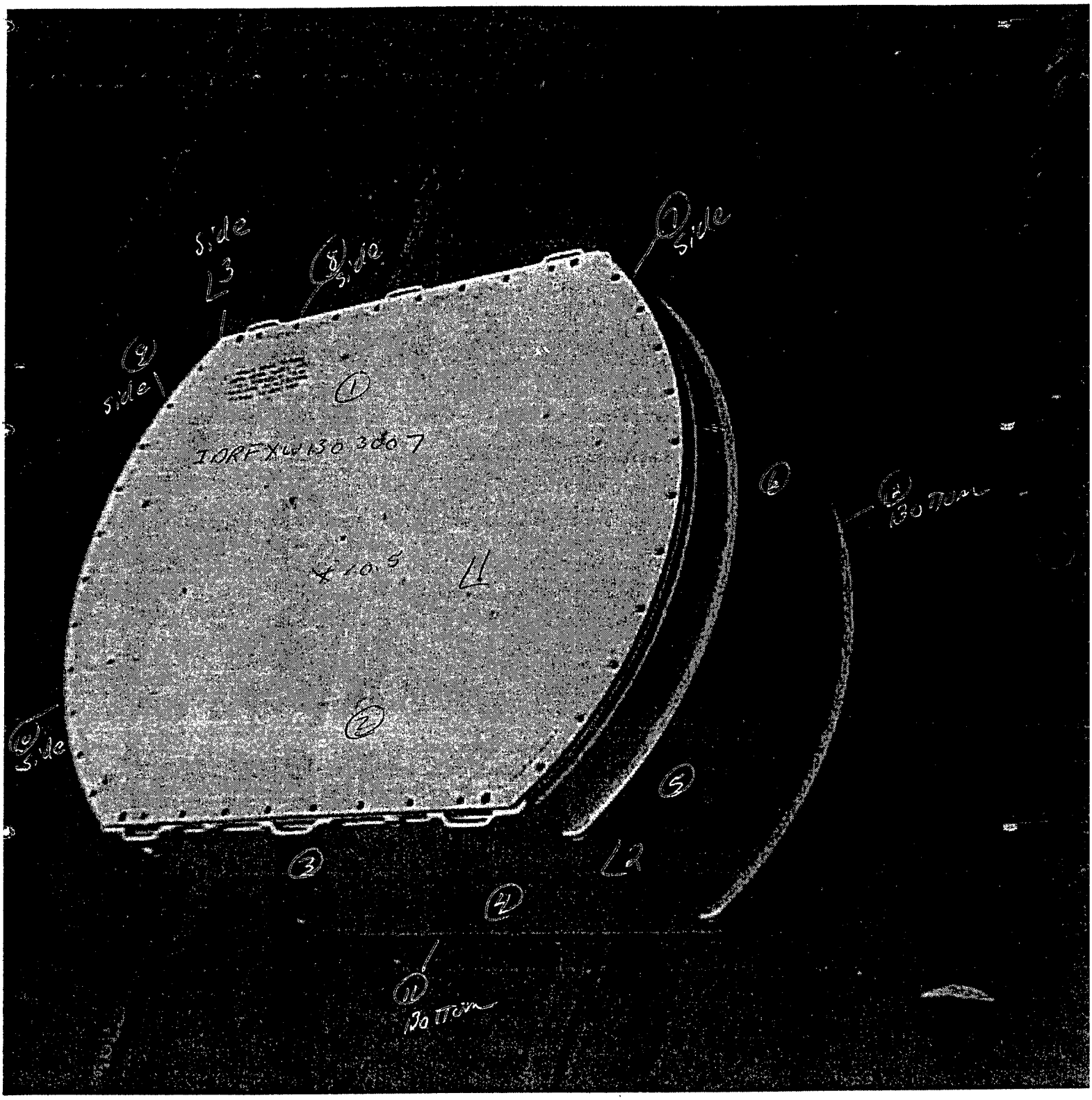
-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

#	General Area Dose Rate
#@#(cm)	Dose Rate at Distance From Source
*#	Contact Dose Rate
#β / #γ	Beta Corrected / Gamma Dose Rates
α	Alpha
β	B
γ	G
n	Neutron

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⌂ - Tritium Swipe

A-239



1 meter - 20.5 mRad
2 meter - 20.5 mRad

Tan Smear Report

COPY

Batch ID:	smear - 200302031533	**Count Date:**	2/3/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,378	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	SWB SURVEY		

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.10	± 0.10	**Alpha:**	29.90	± 0.23
Beta Rate:	5.40	± 0.73	**Beta:**	44.28	± 0.07

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030203153337-A1	Unknown	3.01	3.36	12.70	1.36	5.78	24.22
20030203153507-A2	Unknown	-0.33	0.33	12.70	8.13	6.98	24.22
20030203153618-A3	Unknown	-0.33	0.33	12.70	14.91	8.00	24.22
20030203153728-A4	Unknown	-0.33	0.33	12.70	-7.68	3.60	24.22
20030203153838-A5	Unknown	-0.33	0.33	12.70	21.68	8.90	24.22
20030203153948-A6	Unknown	-0.33	0.33	12.70	28.46	9.72	24.22
20030203154108-A7	Unknown	-0.33	0.33	12.70	57.81	12.68	24.22
20030203154218-A8	Unknown	-0.33	0.33	12.70	26.20	9.46	24.22
20030203154328-A9	Unknown	-0.33	0.33	12.70	26.20	9.46	24.22
20030203154438-A10	Unknown	-0.33	0.33	12.70	21.68	8.90	24.22
20030203154548-A11	Unknown	-0.33	0.33	12.70	23.94	9.18	24.22
20030203154658-A12	Unknown	-0.33	0.33	12.70	17.16	8.31	24.22

Reviewed by: _____

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RADIOLOGICAL SURVEY REPORT

COPY

BARCODE #

BLDG.: TAN 607
AREA/ROOM: HOT SHOP
RWP #: 31002621 OC
LOG #: 10
DATE: 2/3/03
TIME: 1900

☐ ROUTINE **JOB DESCRIPTION**
☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP Report Detail # 3379
COMMENTS: ~~General Area Dose Rate measured at waist level~~ CLC 2-4-03
TRUPACT CONTAINMENT TENT SURVEY (BAGGING ROOM)

RCT: F. Bush / F Bush
PRINT/SIGNATURE

REVIEWED BY:

INSTRUMENTS		
Type	Serial #	Efficiency
		%
		%
		%
Scaler	324920	44.28 %βγ
		29.90 %α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		
1-14			See printout and map				

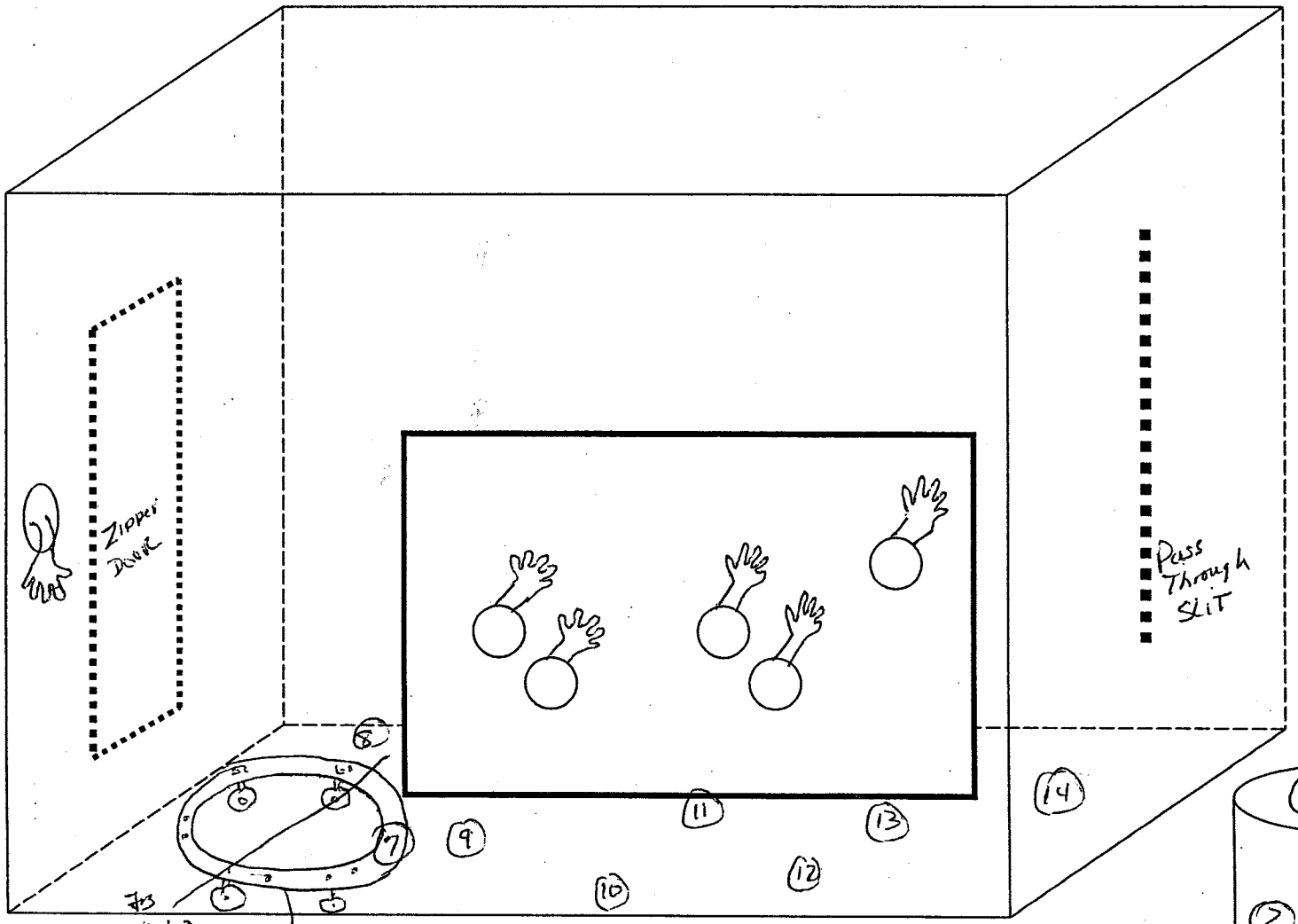
CA Contamination Area
HCA High Contamination Area
RA Radiation Area
HRA High Radiation Area
VHRA Very High Radiation Area
RMA Radioactive Material Area
ARA Airborne Radioactivity Area
RBA Radiological Buffer Area
FCA Fixed Contamination Area
SCA Soil Contamination Area
URMA Underground Radioactive Material Area

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

General Area Dose Rate
#@#(cm) Dose Rate at Distance From Source
*# Contact Dose Rate
#β / #γ Beta Corrected / Gamma Dose Rates
α Al
β Be A-243
γ Ga

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⌂ - Tritium Swipe


Zipper Door
Pass Through Slit
Bagging Room
Cart
Barrel detail. 2 wood blocks in bottom

Tan Smear Report

COPY

Batch ID:	smear - 200302031713	**Count Date:**	2/3/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,379	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	BAGGING AREA		

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.10 ± 0.10		**Alpha:**	29.90 ± 0.23	
Beta Rate:	5.40 ± 0.73		**Beta:**	44.28 ± 0.07	

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)	
20030203171313-A1	Unknown	3.01	3.36	12.70	5.87	6.60	24.22	drum
20030203171443-A2	Unknown	-0.33	0.33	12.70	5.87	6.60	24.22	drum
20030203171553-A3	Unknown	-0.33	0.33	12.70	288.17	26.10	24.22	drum
20030203171703-A4	Unknown	-0.33	0.33	17.02	25.97	11.14	29.81	wood Block
20030203171703-A4 5	Unknown	-0.33	0.33	12.70	19.42	8.61	24.22	Large Block
20030203171703-A4 6	Unknown	-0.33	0.33	14.29	24.15	9.85	26.32	bottom of drum
20030203171813-A5 7	Unknown	-0.33	0.33	12.70	8.13	6.98	24.22	cart
20030203171923-A6 8	Unknown	-0.33	0.33	12.70	26.20	9.46	24.22	"
20030203172043-A7 9	Unknown	-0.33	0.33	12.70	66.85	13.46	24.22	"
20030203172153-A8 10	Unknown	-0.33	0.33	12.70	127.82	17.86	24.22	Floor
20030203172304-A9 11	Unknown	-0.33	0.33	12.70	26.20	9.46	24.22	"
20030203172414-A10 12	Unknown	-0.33	0.33	12.70	39.75	10.96	24.22	"
20030203172524-A11 13	Unknown	-0.33	0.33	12.70	48.78	11.85	24.22	"
20030203172634-A12 14	Unknown	-0.33	0.33	12.70	10.39	7.33	24.22	"

Reviewed by: _____

COPY

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RADIOLOGICAL SURVEY REPORT

BARCODE #

BLDG.: TAN 607
AREA/ROOM: HOT SHOP
RWP #: 31002621 00
LOG #: 10
DATE: 2/3/03
TIME: 1900

☐ ROUTINE **JOB DESCRIPTION**
☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP
COMMENTS: ~~General Area Dose Rate measured at waist level~~ CCC 2-4-03
TRUPACT CONTAINMENT TENT SURVEY (SURVEY STATION)
Report Batch #'s: 5380, 5383

RCT: F. Bush / F Bush
PRINT/SIGNATURE

REVIEWED BY:

INSTRUMENTS		
Type	Serial #	Efficiency
		%
		%
		%
Scaler	324920	44.28 %βγ
		29.90 %α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		
15-29			See printout and map.				

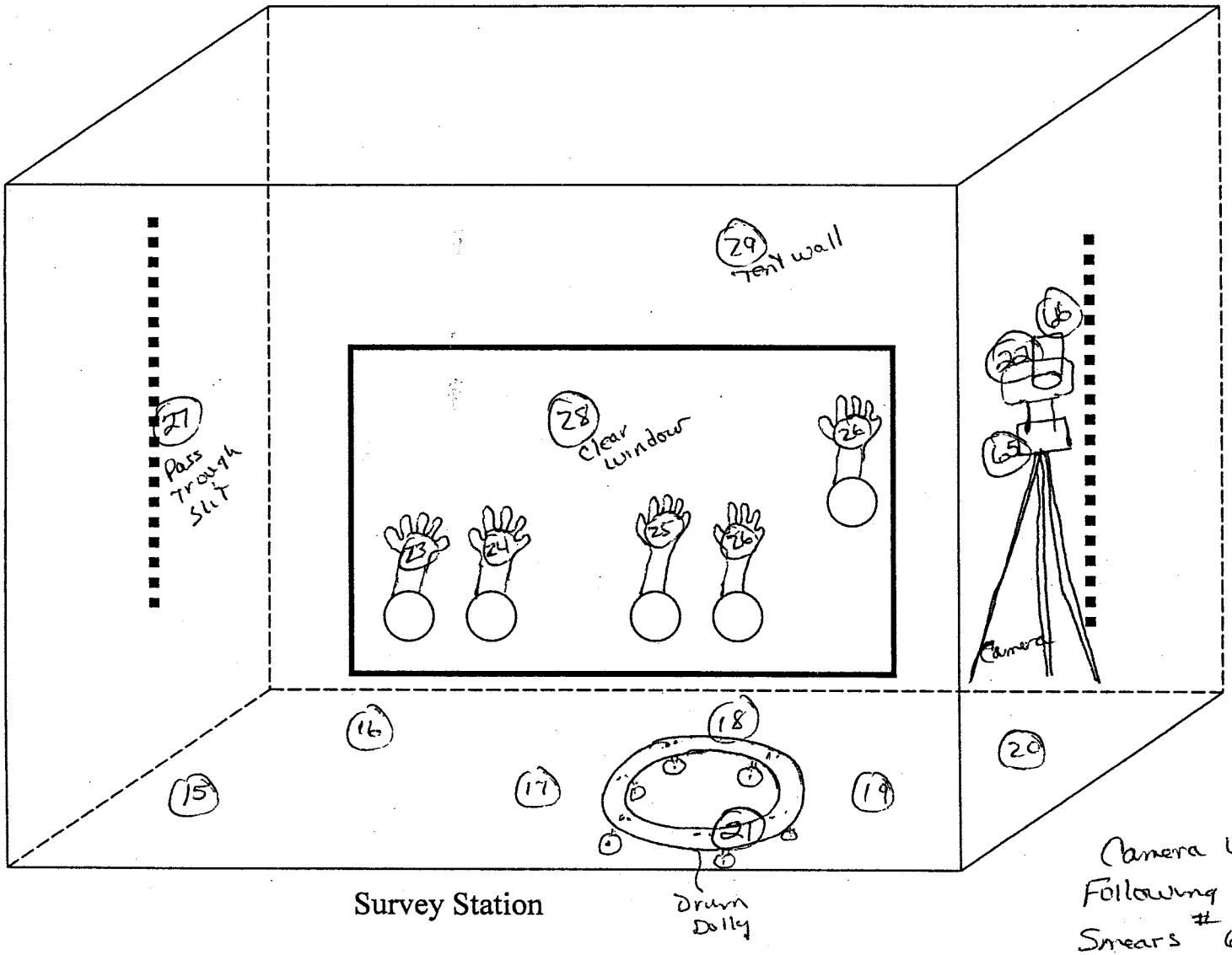
CA Contamination Area
HCA High Contamination Area
RA Radiation Area
HRA High Radiation Area
VHRA Very High Radiation Area
RMA Radioactive Material Area
ARA Airborne Radioactivity Area
RBA Radiological Buffer Area
FCA Fixed Contamination Area
SCA Soil Contamination Area
URMA Underground Radioactive Material Area

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

General Area Dose Rate
#@#(cm) Dose Rate at Distance From Source
*# Contact Dose Rate
#β / #γ Beta Corrected / Gamma Dose Rates
α Al
β Be A-247
γ Gamma

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⌂ - Tritium Swipe



Survey Station

Camera Wiped down Following Smear #22. Smears #65 and #66 were POST decon

Tan Smear Report

COPY

Batch ID:	smear - 200302031719	**Count Date:**	2/3/03
Group:	B	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,380	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	MIDDLE SECTION		

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.10	± 0.10	**Alpha:**	29.90	± 0.23
Beta Rate:	5.40	± 0.73	**Beta:**	44.28	± 0.07

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)	
20030203171935-~~B13~~ 15	Unknown	-0.33	0.33	12.70	37.49	10.72	24.22	Floor
20030203172905-~~B14~~ 16	Unknown	-0.33	0.33	12.70	229.45	23.42	24.22	"
20030203173016-~~B15~~ 17	Unknown	-0.33	0.33	12.70	26.20	9.46	24.22	"
20030203173126-~~B16~~ 18	Unknown	-0.33	0.33	12.70	32.97	10.24	24.22	"
20030203173236-~~B17~~ 19	Unknown	-0.33	0.33	12.70	57.81	12.68	24.22	"
20030203173346-~~B18~~ 20	Unknown	6.35	4.74	12.70	145.89	18.97	24.22	"
20030203173456-~~B19~~ 21	Unknown	-0.33	0.33	12.70	23.94	9.18	24.22	Drum Dolly
20030203173606-~~B20~~ 22	Unknown	19.73	8.20	12.70	3,156.30	84.75	24.22	Camera - see next page
20030203173716-~~B21~~ 23	Unknown	-0.33	0.33	12.70	12.65	7.67	24.22	Gloves
20030203173836-~~B22~~ 24	Unknown	-0.33	0.33	12.70	98.46	15.90	24.22	"
20030203173946-~~B23~~ 25	Unknown	-0.33	0.33	12.70	30.71	9.98	24.22	"
20030203174056-~~B24~~ 26	Unknown	3.01	3.36	12.70	62.33	13.08	24.22	"
20030203174206-~~B25~~ 27	Unknown	3.01	3.36	12.70	5.87	6.60	24.22	Tent + walls
20030203174316-~~B26~~ 28	Unknown	-0.33	0.33	12.70	19.42	8.61	24.22	"
20030203174426-~~B27~~ 29	Unknown	3.01	3.36	12.70	10.39	7.33	24.22	"

Reviewed by: _____

COPY

Tan Smear Report

Batch ID:	smear - 200302031802	**Count Date:**	2/3/03
Group:	B	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,383	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	CAMERA 2ND SET Post decon		

Background (cpm)				Efficiency (%)			
Alpha Rate:	0.10	±	0.10	**Alpha:**	29.90	±	0.23
Beta Rate:	5.40	±	0.73	**Beta:**	44.28	±	0.07

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030203180233-~~B16~~ 65	Unknown	-0.33	0.33	12.70	39.75	10.96	24.22
20030203182245-~~B17~~ 66	Unknown	-0.33	0.33	12.70	64.59	13.27	24.22

Reviewed by: _____

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RADIOLOGICAL SURVEY REPORT

COPY

BARCODE #

BLDG.: TAN
AREA/ROOM: TRUPACT ICV BOX
RWP #: N/A
LOG #: 6
DATE: 2/3/03
TIME: 1140

☐ ROUTINE **JOB DESCRIPTION**
☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP

Report Batch # 5374

COMMENTS: ~~General Area Dose Rate measured at waist level~~ 2-3-03
RBA EXIT SURVEY OF BOX CONTAINING TRUPACT ICV.

RCT: F. Bush/ F. Bush Lewis Bird/ [signature]
PRINT/SIGNATURE

REVIEWED BY: [signature]

INSTRUMENTS		
Type	Serial #	Efficiency
2/A	801206	10%
		%
		%
Scaler	324920	44.28
		29.90%α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	~~<1000/ <5000~~	~~2/3/03 <20 / NA~~		
1-5			See map and LB5100 Printout				
	1-5		See map.			2 / K	NA

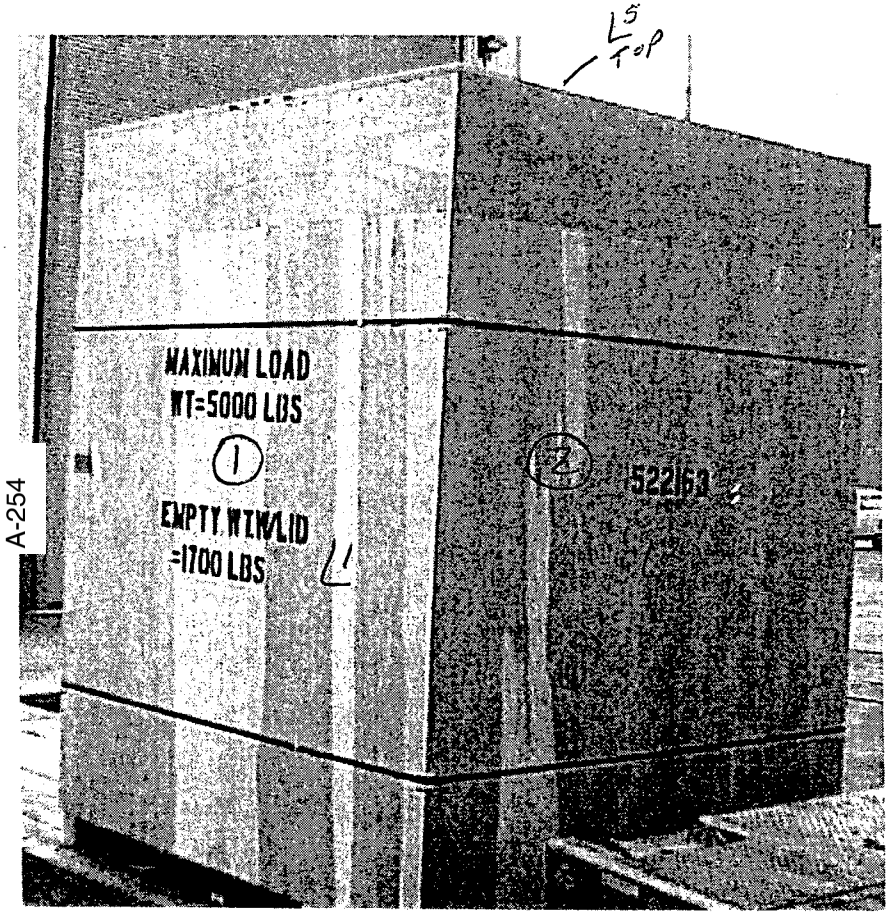
CA Contamination Area
HCA High Contamination Area
RA Radiation Area
HRA High Radiation Area
VHRA Very High Radiation Area
RMA Radioactive Material Area
ARA Airborne Radioactivity Area
RBA Radiological Buffer Area
FCA Fixed Contamination Area
SCA Soil Contamination Area

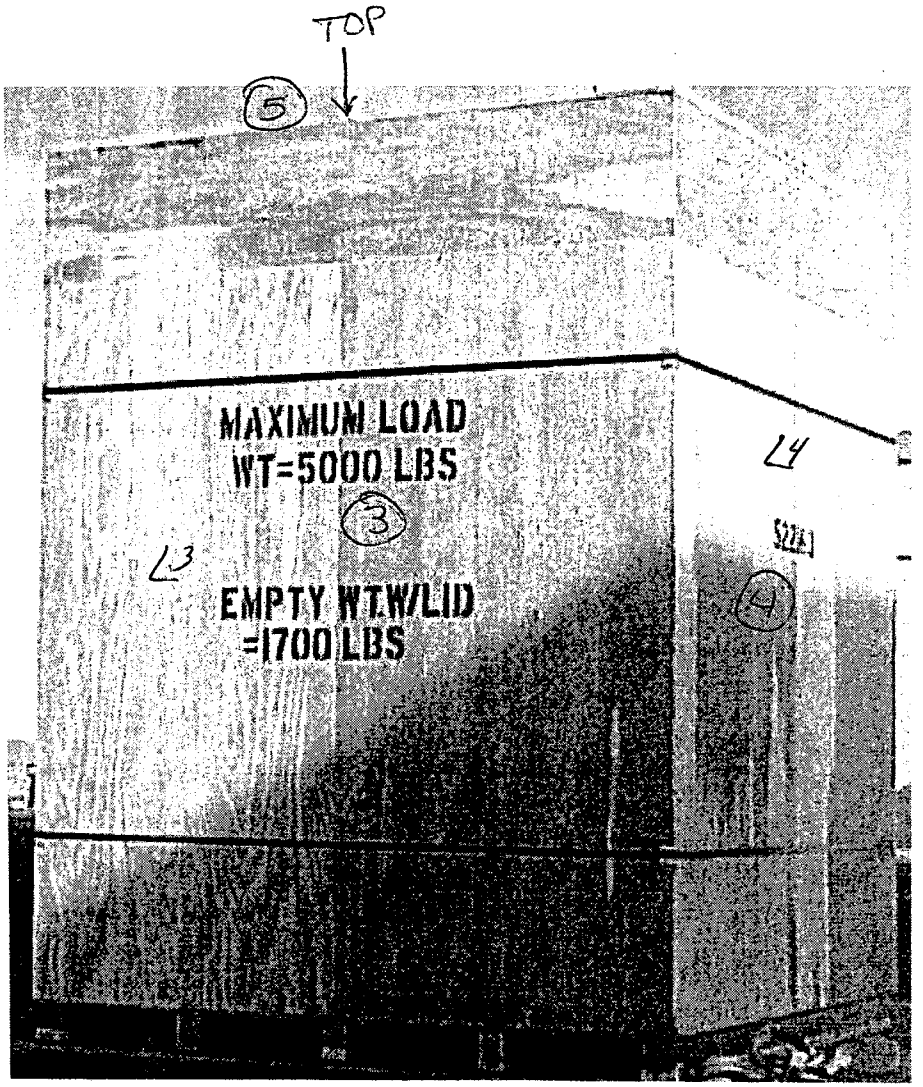
-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

General Area Dose Rate
#@#(cm) Dose Rate at Distance From Source
*# Contact Dose Rate
#β / #γ Beta Corrected / Gamma Dose Rates
α Al
β Be

□ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⬠ - Tritium Swipe


L5
TOP
MAXIMUM LOAD
WT=5000 LBS
1
EMPTY WT.W/LID
=1700 LBS
L1
2
522163


TOP
5
MAXIMUM LOAD
WT=5000 LBS
3
L3
EMPTY WT.W/LID
=1700 LBS
L4
4

A-254

Tan Smear Report

Batch ID:	smear - 200302031024	**Count Date:**	2/3/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,374	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	TRUPACT ICV BOX SURVEY		

Background (cpm)				Efficiency (%)			
Alpha Rate:	0.10	±	0.10	**Alpha:**	29.90	±	0.23
Beta Rate:	5.40	±	0.73	**Beta:**	44.28	±	0.07

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
)203102442-A1	Unknown	3.01	3.36	12.70	10.39	7.33	24.22
)203102613-A2	Unknown	-0.33	0.33	12.70	14.91	8.00	24.22
)203102723-A3	Unknown	3.01	3.36	12.70	8.13	6.98	24.22
20030203102833-A4	Unknown	-0.33	0.33	12.70	5.87	6.60	24.22
20030203102943-A5	Unknown	-0.33	0.33	12.70	28.46	9.72	24.22

A-255

COPY

Reviewed by: _____

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RADIOLOGICAL SURVEY REPORT

COPY

INSTRUMENTS		
Type	Serial #	Efficiency
		%
		%
		%
Scaler	324920	44.28 %βγ
		29.80 %α
Ro-20	81780	

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	<2001 NA	<201 N.A		
1-20			See HB 5100 Print out				

CA Contamination Area
HCA High Contamination Area
RA Radiation Area
HRA High Radiation Area
VHRA Very High Radiation Area
RMA Radioactive Material Area
ARA Airborne Radioactivity Area
RBA Radiological Buffer Area
FCA Fixed Contamination Area
SCA Soil Contamination Area
URMA Underground Radioactive Material Area
SOP Step-Off Pad

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

General Area Dose Rate
#@#(cm) Dose Rate at Distance From Source
*# Contact Dose Rate
#β / #γ Beta Corrected / Gamma Dose Rates
α Alpha
β Beta
γ Gamma
n Neutron

□ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⬠ - Tritium Swipe

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RADIOLOGICAL SURVEY REPORT

BARCODE #

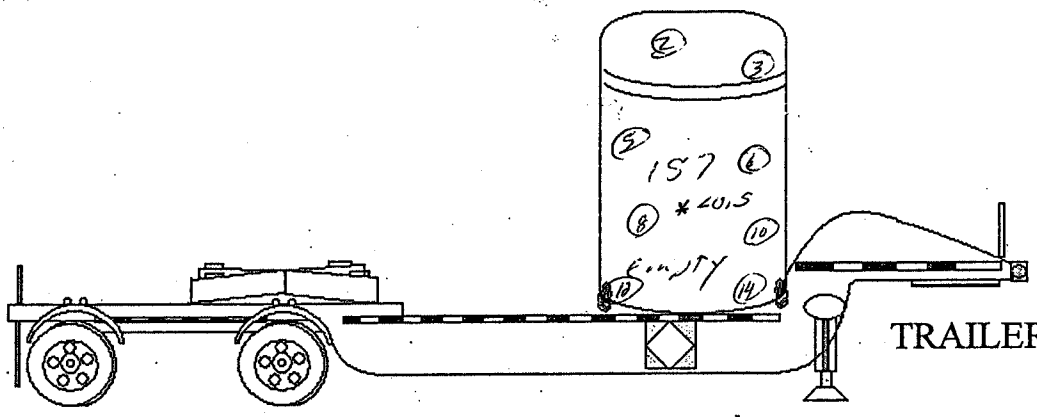
BLDG.: West of 668
AREA/ROOM: TAN
RWP #: NA
LOG #: 5
DATE: 2-3-03
TIME: 1205

☐ ROUTINE **JOB DESCRIPTION**
☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP Report Butler #537
COMMENTS: Outgoing Shipment Trailer and CASK #157 From TAN. CASK is empty NO ICV or drum's.

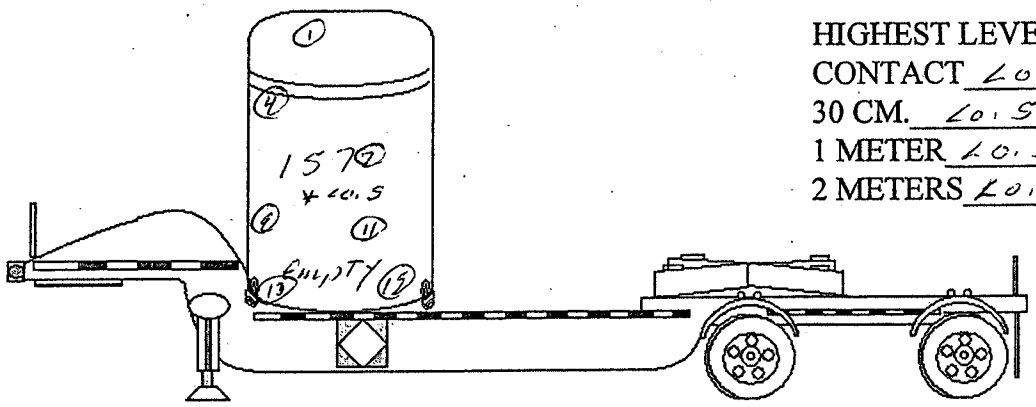
RCT: L McKinley / L McKinley PRINT/SIGNATURE F Bush / J Bush REVIEWED BY:

TRUPACT

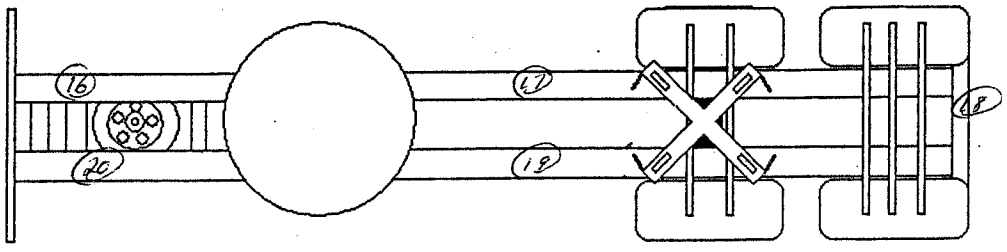
CASK # 157



TRAILER # 8



HIGHEST LEVEL@
CONTACT <0.5
30 CM. <0.5
1 METER <0.5
2 METERS <0.5



Tan Smear Report

Batch ID:	smear - 200302031057	**Count Date:**	2/3/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,375	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	OCA TRUPACT 157 SHIPMENT SURVEY.		

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.10 ± 0.10		**Alpha:**	29.90 ± 0.23	
Beta Rate:	5.40 ± 0.73		**Beta:**	44.28 ± 0.07	

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030203105746-A1	Unknown	-0.33	0.33	12.70	8.13	6.98	24.22
20030203105916-A2	Unknown	3.01	3.36	12.70	3.61	6.20	24.22
20030203110026-A3	Unknown	6.35	4.74	12.70	14.91	8.00	24.22
20030203110136-A4	Unknown	3.01	3.36	12.70	5.87	6.60	24.22
20030203110246-A5	Unknown	-0.33	0.33	12.70	21.68	8.90	24.22
20030203110356-A6	Unknown	-0.33	0.33	12.70	44.26	11.41	24.22
20030203110516-A7	Unknown	6.35	4.74	12.70	57.81	12.68	24.22
20030203110627-A8	Unknown	-0.33	0.33	12.70	12.65	7.67	24.22
20030203110737-A9	Unknown	3.01	3.36	12.70	14.91	8.00	24.22
20030203110847-A10	Unknown	3.01	3.36	12.70	12.65	7.67	24.22
20030203110957-A11	Unknown	-0.33	0.33	12.70	12.65	7.67	24.22
20030203111107-A12	Unknown	-0.33	0.33	12.70	19.42	8.61	24.22
20030203111217-A13	Unknown	-0.33	0.33	12.70	14.91	8.00	24.22
20030203111327-A14	Unknown	6.35	4.74	12.70	100.72	16.06	24.22
20030203111447-A15	Unknown	-0.33	0.33	12.70	5.87	6.60	24.22
20030203111557-A16	Unknown	6.35	4.74	12.70	8.13	6.98	24.22
20030203111707-A17	Unknown	-0.33	0.33	12.70	37.49	10.72	24.22
20030203111817-A18	Unknown	3.01	3.36	12.70	5.87	6.60	24.22
20030203111927-A19	Unknown	6.35	4.74	12.70	23.94	9.18	24.22
20030203112037-A20	Unknown	9.70	5.80	12.70	26.20	9.46	24.22

Reviewed by: _____

441.45#
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RADIOLOGICAL SURVEY REPORT

COPY

BARCODE #

BLDG.: 668	☐ ROUTINE **JOB DESCRIPTION**
AREA/ROOM: outside west 668	☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP Report Batch # 5389
RWP #: n/a	COMMENTS: swb shipment to RW inc.
LOG #: 1	1meter <0.5, 2meter <0.5 mrem/hr
DATE: 2-4-03	
TIME: 0930	

RCT: L. Bird / J. Johnston / L McKinlay
PRINT/SIGNATURE

REVIEWED BY:

INSTRUMENTS		
Type	Serial #	Efficiency
		%
		%
		%
Scaler	324920	44.28 %βγ
		29.9 %α
RO-20	502084	
E600	501850	

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²) βγ	SWIPE/SCAN (dpm/100cm²) α	LAW (dpm) βγ	LAW (dpm) α
*		*	RCM Table 2-2 limits used for this survey.	<200/NA	<20/NA		
1-6			see L13 5100 print out				

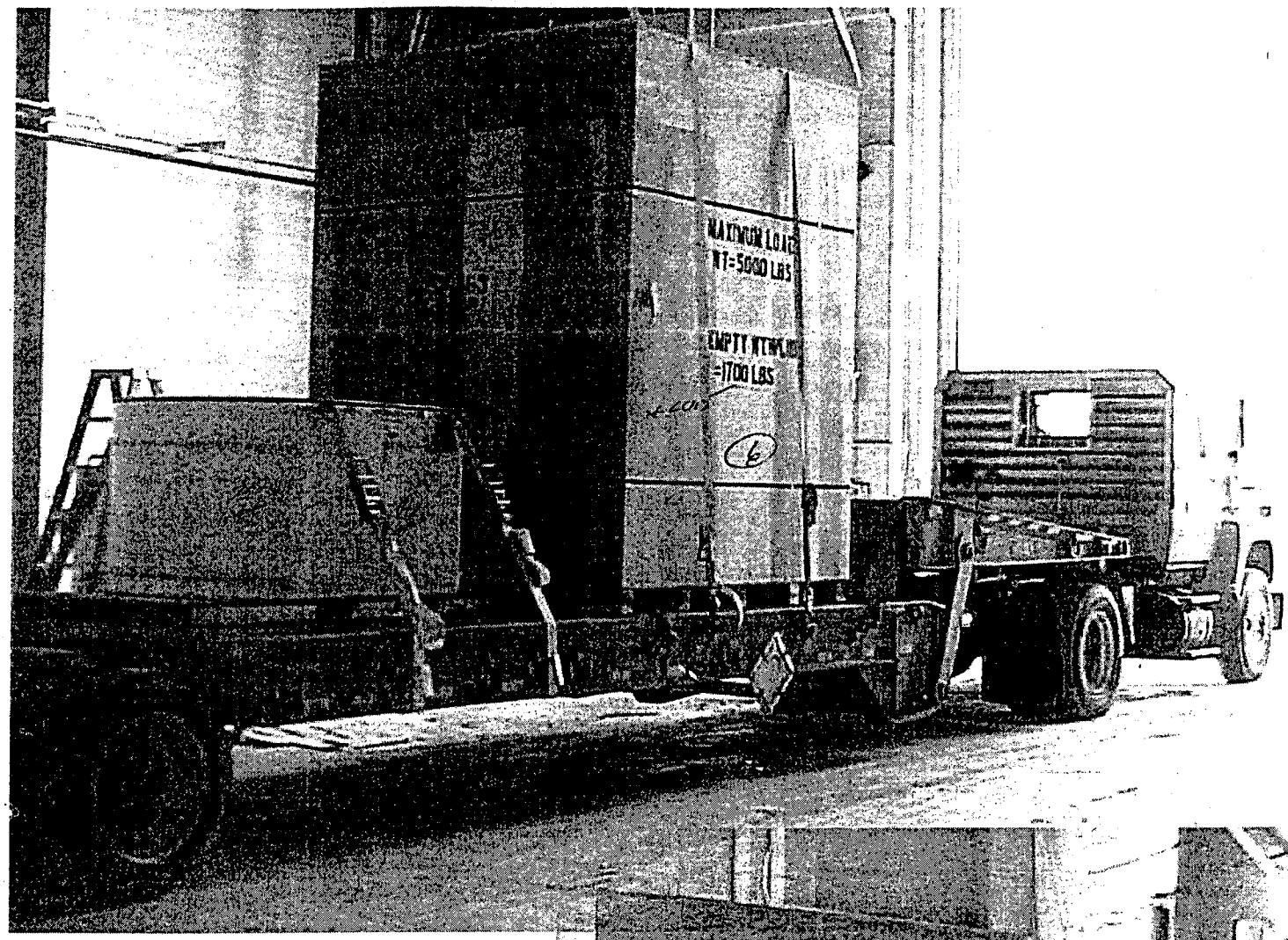
CA	Contamination Area
HCA	High Contamination Area
RA	Radiation Area
HRA	High Radiation Area
VHRA	Very High Radiation Area
RMA	Radioactive Material Area
ARA	Airborne Radioactivity Area
RBA	Radiological Buffer Area
FCA	Fixed Contamination Area
SCA	Soil Contamination Area
URMA	Underground Radioactive Material Area

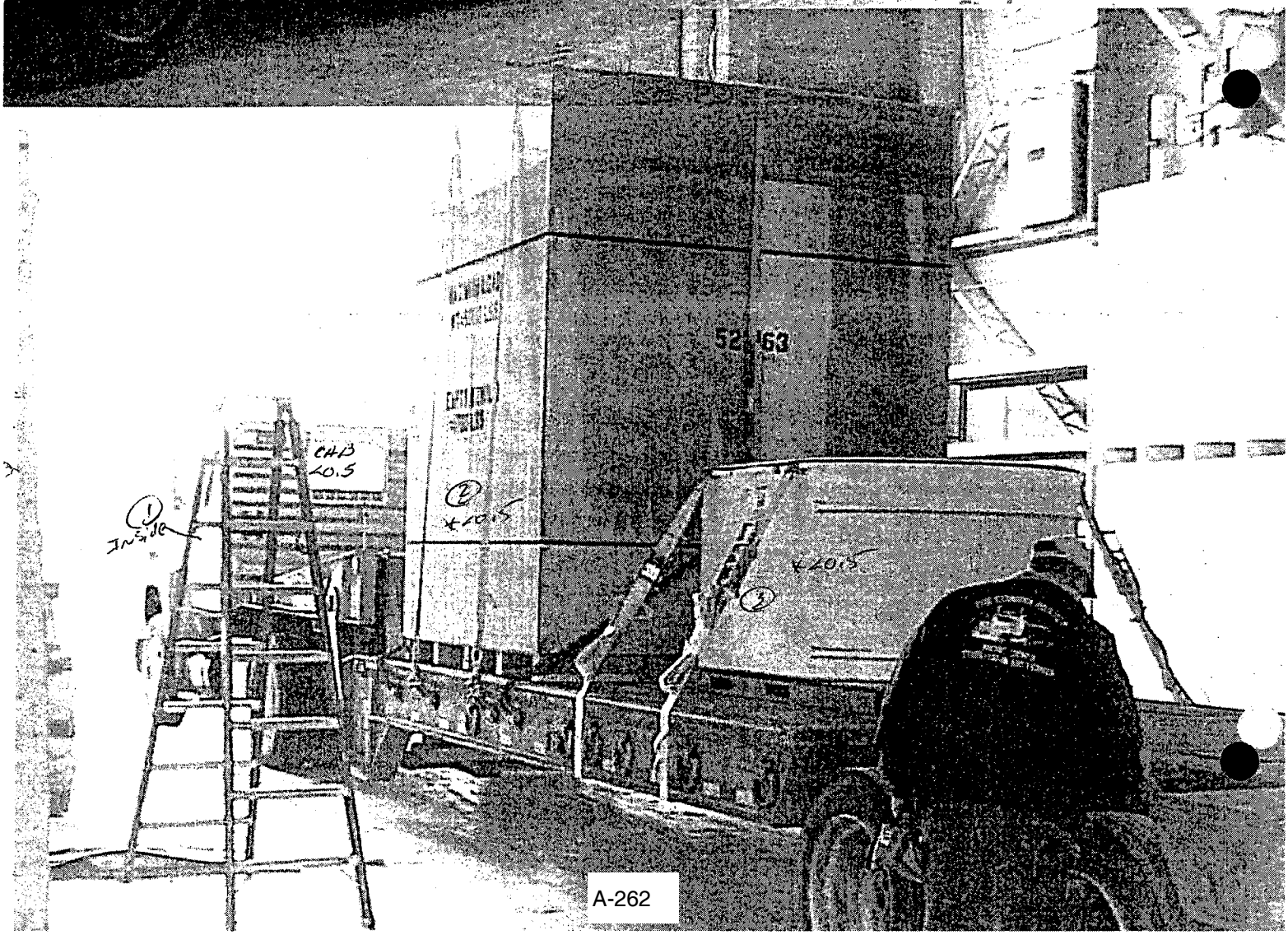
-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

#	General Area Dose Rate
#@#(cm)	Dose Rate at Distance From Source
*#	Contact Dose Rate
#β / #γ	Beta Corrected / Gamma Dose Rates
α	Alpha
β	B
γ	G

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⌂ - Tritium Swipe


MAXIMUM LOAD
WT=5080 LBS
EMPTY WT WILL
=1700 LBS
6


52-63
CHP
20.5
1
INSIDE
2
20.5
20.5
3

Tan Smear Report

Batch ID:	smear - 200302040909	**Count Date:**	2/4/03
Group:	B	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,389	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	SWB/ICV SHIPMENT TO RWMC		

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.30 ± 0.17		**Alpha:**	29.90 ± 0.23	
Beta Rate:	5.30 ± 0.73		**Beta:**	44.28 ± 0.07	

COPY

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030204090930-B14 (1)	Unknown	-1.00	0.58	15.37	100.95	16.05	24.05
~~20030204091901-B15~~	~~Unknown~~	~~1.00~~	~~0.58~~	~~208.04~~	~~11.97~~	~~1.64~~	~~198.91~~
20030204091901-B15 (2)	Unknown	2.34	3.39	15.37	6.10	6.60	24.05
~~20030204091901-B15~~	~~Unknown~~	~~1.00~~	~~0.58~~	~~24.80~~	~~4.46~~	~~8.38~~	~~34.80~~
20030204092011-B16 (3)	Unknown	2.34	3.39	15.37	6.10	6.60	24.05
20030204092121-B17 (4)	Unknown	-1.00	0.58	15.37	30.94	9.98	24.05
20030204092231-B18 (5)	Unknown	-1.00	0.58	15.37	67.07	13.46	24.05
20030204092351-B19 (6)	Unknown	-1.00	0.58	15.37	98.69	15.89	24.05

C.C 2-4-03

2-4-03

Reviewed by: _____

441.45#
10/10/97
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RADIOLOGICAL SURVEY REPORT

COPY

BARCODE #

BLDG.: 668
AREA/ROOM: outside west 668
RWP #: NA
LOG #: 1
DATE: 2-4-03
TIME: 0930

☐ ROUTINE
☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP

JOB DESCRIPTION Report Batch # 5388

COMMENTS: SWB shipment to RWMC
1 meter <0.5 mR/Hr, 2 meter <0.5 mR/Hr

RCT: J. Bird / J. Johnston / L. McKinlay
PRINT/SIGNATURE

REVIEWED BY:

INSTRUMENTS		
Type	Serial #	Efficiency
		%
		%
		%
Scaler	324920	44.28 %βγ
		29.9 %α
Ro-20	802084	
E600	801850	

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	<200/NA	<20/NA		
1-13			See 213 5100 print out				

CA	Contamination Area	-x—x-	Radiological Barrier	☐ -	Direct Scan
HCA	High Contamination Area				
RA	Radiation Area		ALL dose rates are in mrem/hr, unless otherwise noted.	○ -	Swipe (Smear)
HRA	High Radiation Area				
VHRA	Very High Radiation Area	#	General Area Dose Rate	L -	Large Area Wipe (LAW)
RMA	Radioactive Material Area	#@#(cm)	Dose Rate at Distance From Source		
ARA	Airborne Radioactivity Area	*#	Contact Dose Rate	△ -	Air Sample
RBA	Radiological Buffer Area	#β / #γ	Beta Corrected / Gamma Dose Rates		
FCA	Fixed Contamination Area	α	Alpha	⌂ -	Tritium Swipe
SCA	Soil Contamination Area	β	B		
URMA	Underground Radioactive Material Area	γ	G		

Tan Smear Report

Batch ID:	smear - 200302040901	**Count Date:**	2/4/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,388	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	SWB SHIPMENT TO RWMC		

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.30	± 0.17	**Alpha:**	29.90	± 0.23
Beta Rate:	5.30	± 0.73	**Beta:**	44.28	± 0.07

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030204090202-A1	Unknown	12.38	6.72	15.37	21.91	8.90	24.05
20030204090333-A2	Unknown	-1.00	0.58	15.37	21.91	8.90	24.05
20030204090443-A3	Unknown	5.69	4.77	15.37	15.13	7.99	24.05
20030204090553-A4	Unknown	-1.00	0.58	15.37	6.10	6.60	24.05
20030204090703-A5	Unknown	5.69	4.77	15.37	19.65	8.61	24.05
20030204090813-A6	Unknown	-1.00	0.58	15.37	30.94	9.98	24.05
20030204090933-A7	Unknown	2.34	3.39	15.37	69.33	13.65	24.05
20030204091043-A8	Unknown	-1.00	0.58	15.37	21.91	8.90	24.05
20030204091153-A9	Unknown	-1.00	0.58	15.37	8.36	6.97	24.05
20030204091303-A10	Unknown	-1.00	0.58	15.37	3.84	6.20	24.05
20030204091413-A11	Unknown	-1.00	0.58	15.37	6.10	6.60	24.05
20030204091523-A12	Unknown	-1.00	0.58	15.37	15.13	7.99	24.05
20030204091633-A13	Unknown	2.34	3.39	15.37	8.36	6.97	24.05

Reviewed by: _____

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RADIOLOGICAL SURVEY REPORT

COPY

BARCODE #

BLDG.: HOT SHOP/EXTENSION
AREA/ROOM: TRUPACT FLOOR PLAN
RWP #: 3100 26.17 00
LOG #: 9
DATE: 2-4-03
TIME: 1500

☐ ROUTINE **JOB DESCRIPTION**
☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP

COMMENTS: ~~General Area Dose Rate measured at waist level~~ Report Bkbl #5397 2-4-03
Release of RBA extension in HOTSHOP.

RCT: [illegible] / [illegible] PRINT/SIGNATURE

REVIEWED BY: [illegible]

INSTRUMENTS		
Type	Serial #	Efficiency
AA	850597	10 %
		%
		%
Scaler	324920	44.28 %βγ
		79.9 %α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		
1-10			See 43 SIOW printout				

CA Contamination Area
HCA High Contamination Area
RA Radiation Area
HRA High Radiation Area
VHRA Very High Radiation Area
RMA Radioactive Material Area
ARA Airborne Radioactivity Area
RBA Radiological Buffer Area
FCA Fixed Contamination Area
SCA Soil Contamination Area

-x—x- Radiological Barrier

ALL dose rates are in mrem/hr, unless otherwise noted.

General Area Dose Rate
#@#(cm) Dose Rate at Distance From Source
*# Contact Dose Rate
#β / #γ Beta / Gamma Dose Rates
α Alpha
β Beta

☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⌂ - Tritium Swipe

SILO
WORK PLATFORM
CA/HRA
RBA/RA

Tan Smear Report

Batch ID:	smear - 200302041611	**Count Date:**	2/4/03
Group:	A	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,397	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	RELEASE OF RBA IN HOTSHOP		

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.30 ± 0.17		**Alpha:**	29.90 ± 0.23	
Beta Rate:	5.30 ± 0.73		**Beta:**	44.28 ± 0.07	

COPY

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030204161109-A1	Unknown	2.34	3.39	15.37	17.39	8.31	24.05
20030204161239-A2	Unknown	-1.00	0.58	15.37	17.39	8.31	24.05
20030204161349-A3	Unknown	-1.00	0.58	15.37	26.42	9.46	24.05
20030204161459-A4	Unknown	-1.00	0.58	15.37	6.10	6.60	24.05
20030204161609-A5	Unknown	-1.00	0.58	15.37	28.68	9.72	24.05
20030204161720-A6	Unknown	-1.00	0.58	15.37	35.46	10.48	24.05
20030204161840-A7	Unknown	-1.00	0.58	15.37	76.11	14.20	24.05
20030204161950-A8	Unknown	-1.00	0.58	15.37	24.16	9.18	24.05
20030204162100-A9	Unknown	-1.00	0.58	15.37	19.65	8.61	24.05
20030204162210-A10	Unknown	-1.00	0.58	15.37	19.65	8.61	24.05

Reviewed by: _____

441.45#
10/10/97
Rev. #03

RADIOLOGICAL SURVEY REPORT

COPY

BARCODE #

BLDG.: TAN 607
AREA/ROOM: HOT SHOP
RWP #: 31002631 00
LOG #: 10
DATE: 2/3/03
TIME: 1900

☐ ROUTINE **JOB DESCRIPTION**
☒ NON ROUTINE (SPECIFY) ☐ FOLLOW UP
COMMENTS: ~~General Area Dose Rate measured at waist level~~ 6" 2-4-03
TRUPACT CONTAINMENT TENT SURVEY (PAYLOAD ROOM)
Report Batch #s = 5381, 5382, 5384, 5385

RCT: F. Bush / T Bush
PRINT/SIGNATURE

REVIEWED BY:

INSTRUMENTS		
Type	Serial #	Efficiency
		%
		%
		%
Scaler	324920	44.28 %βγ
		29.90 %α

SURVEY DATA AND LEGEND

ALL SWIPE, LARGE AREA WIPE (LAW), AND DIRECT SCAN SURVEY LOCATIONS ARE IDENTIFIED ON THE MAP. THOSE LOCATIONS WHERE ACTIVITY IS GREATER THAN OR EQUAL TO THE RADCON MANUAL (RCM) TABLE 2-2 LIMITS* ARE RECORDED BELOW.

SWIPE No.	LAW No.	DIRECT SCAN No.	LOCATION OR ITEM DESCRIPTION	SWIPE/SCAN (dpm/100cm²)		LAW (dpm)	
				βγ	α	βγ	α
*		*	RCM Table 2-2 limits used for this survey.	<1000/ <5000	<20 / NA		
30-68			See map and printout				

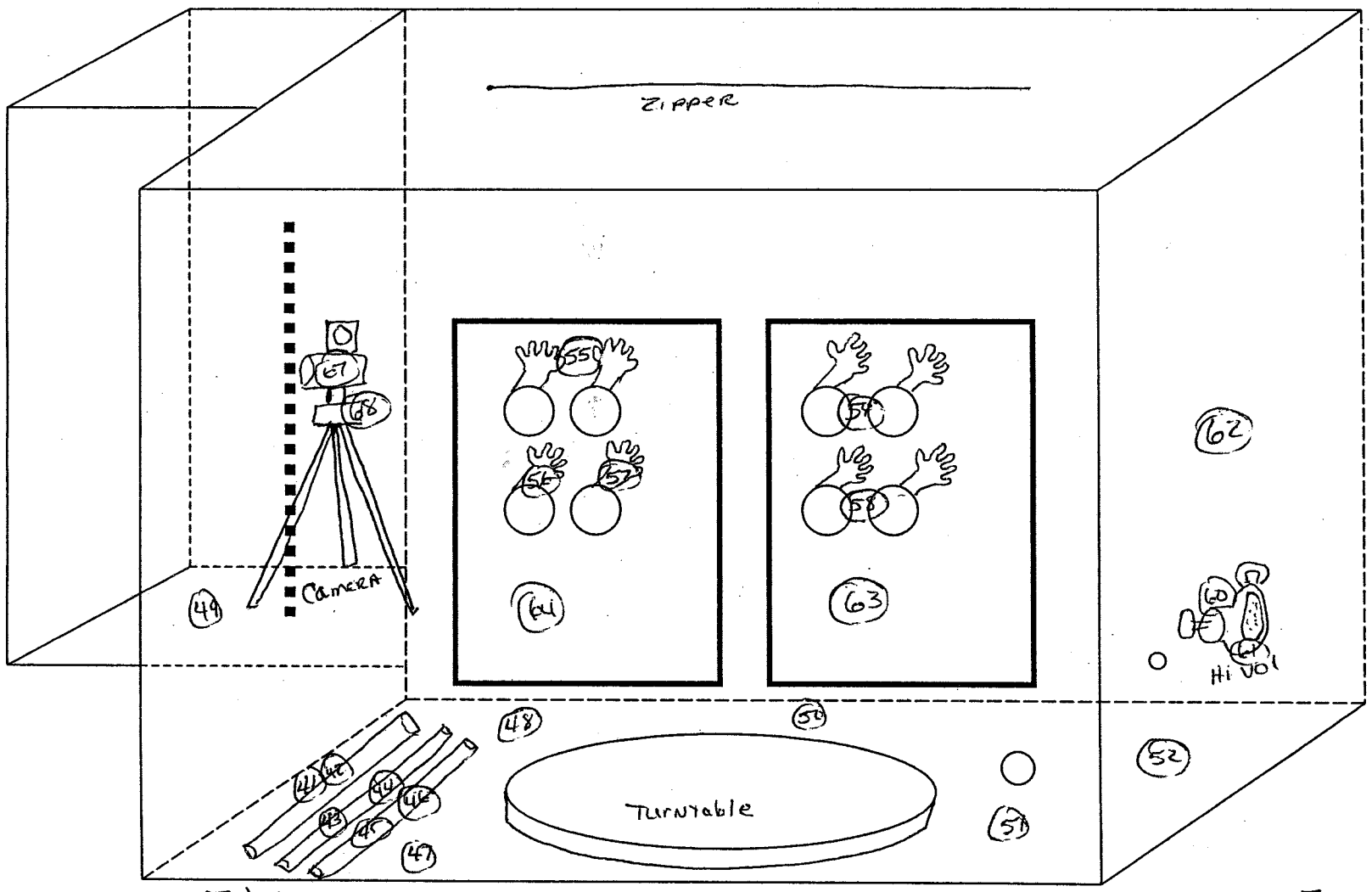
CA Contamination Area
HCA High Contamination Area
RA Radiation Area
HRA High Radiation Area
VHRA Very High Radiation Area
RMA Radioactive Material Area
ARA Airborne Radioactivity Area
RBA Radiological Buffer Area
FCA Fixed Contamination Area
SCA Soil Contamination Area
URMA Underground Radioactive Material Area

-x—x- Radiological Barrier

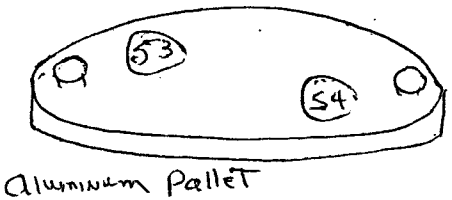
ALL dose rates are in mrem/hr, unless otherwise noted.

General Area Dose Rate
#@#(cm) Dose Rate at Distance From Source
*# Contact Dose Rate
#β / #γ Beta Corrected / Gamma Dose Rates
α Alpha
β Beta
γ Gamma

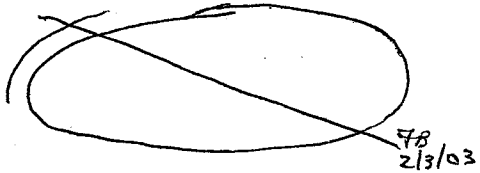
☐ - Direct Scan
○ - Swipe (Smear)
L - Large Area Wipe (LAW)
△ - Air Sample
⌂ - Tritium Swipe



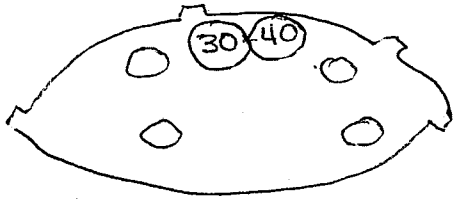
Payload Room



Aluminum Pallet



FB 2/3/03



4 Slip sheets

Tan Smear Report

COPY

Batch ID:	smear - 200302031726	**Count Date:**	2/3/03
Group:	C	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,381	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:			

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.10 ± 0.10		**Alpha:**	29.90 ± 0.23	
Beta Rate:	5.40 ± 0.73		**Beta:**	44.28 ± 0.07	

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)	
20030203172654-~~C28~~ 30	Unknown	-0.33	0.33	12.70	60.07	12.88	24.22	Bottom Slip Sheet
20030203174655-~~C29~~ 31	Unknown	-0.33	0.33	12.70	39.75	10.96	24.22	"
20030203174805-~~C30~~ 32	Unknown	-0.33	0.33	12.70	57.81	12.68	24.22	"
20030203174915-~~C31~~ 33	Unknown	-0.33	0.33	12.70	14.91	8.00	24.22	"
20030203175025-~~C32~~ 34	Unknown	-0.33	0.33	12.70	10.39	7.33	24.22	"
20030203175135-~~C33~~ 35	Unknown	-0.33	0.33	12.70	-3.16	4.81	24.22	"
20030203175256-~~C34~~ 36	Unknown	-0.33	0.33	12.70	23.94	9.18	24.22	"
20030203175406-~~C35~~ 37	Unknown	-0.33	0.33	12.70	-0.90	5.32	24.22	"
20030203175516-~~C36~~ 38	Unknown	3.01	3.36	12.70	14.91	8.00	24.22	"
20030203175626-~~C37~~ 39	Unknown	-0.33	0.33	12.70	30.71	9.98	24.22	"
20030203175736-~~C38~~ 40	Unknown	-0.33	0.33	12.70	8.13	6.98	24.22	"
20030203175846-~~C39~~ 41	Unknown	3.01	3.36	12.70	26.20	9.46	24.22	Outside Wall Tube
20030203175956-~~C40~~ 42	Unknown	-0.33	0.33	12.70	5.87	6.60	24.22	" Tube 2
20030203180116-~~C41~~ 43	Unknown	-0.33	0.33	12.70	5.87	6.60	24.22	Inside Tube 1
20030203180226-~~C42~~ 44	Unknown	-0.33	0.33	12.70	19.42	8.61	24.22	Tube 2

Reviewed by: _____

Tan Smear Report

COPY

Batch ID:	smear - 200302031743	**Count Date:**	2/3/03
Group:	D	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,382	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:			

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.10 ± 0.10		**Alpha:**	29.90 ± 0.23	
Beta Rate:	5.40 ± 0.73		**Beta:**	44.28 ± 0.07	

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)	
20030203174329-~~D1~~45	Unknown	3.01	3.36	12.70	10.39	7.33	24.22	Outside Tube 3
20030203180451-~~D2~~46	Unknown	-0.33	0.33	12.70	8.13	6.98	24.22	Inside Tube 3
20030203180601-~~D3~~47	Unknown	-0.33	0.33	12.70	222.68	23.09	24.22	Tent Floor
20030203180711-~~D4~~48	Unknown	-0.33	0.33	12.70	96.21	15.73	24.22	"
20030203180821-~~D5~~49	Unknown	-0.33	0.33	12.70	136.86	18.42	24.22	"
20030203180931-~~D6~~50	Unknown	3.01	3.36	12.70	78.14	14.38	24.22	"
20030203181041-~~D7~~51	Unknown	3.01	3.36	12.70	130.08	18.00	24.22	"
20030203181151-~~D8~~52	Unknown	-0.33	0.33	12.70	105.24	16.37	24.22	"
20030203181311-~~D9~~53	Unknown	-0.33	0.33	12.70	37.49	10.72	24.22	Pallet
20030203181421-~~D10~~54	Unknown	3.01	3.36	12.70	14.91	8.00	24.22	Pallet
20030203181532-~~D11~~55	Unknown	3.01	3.36	12.70	21.68	8.90	24.22	gloves
20030203181642-~~D12~~56	Unknown	-0.33	0.33	12.70	30.71	9.98	24.22	"
20030203181752-~~D13~~57	Unknown	6.35	4.74	12.70	10.39	7.33	24.22	"
20030203181902-~~D14~~58	Unknown	-0.33	0.33	12.70	93.95	15.57	24.22	"
20030203182012-~~D15~~59	Unknown	-0.33	0.33	12.70	19.42	8.61	24.22	"

Reviewed by: _____

Tan Smear Report

COPY

Batch ID:	smear - 200302031805	**Count Date:**	2/3/03
Group:	C	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,384	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	HI-VOL		

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.10 ± 0.10		**Alpha:**	29.90 ± 0.23	
Beta Rate:	5.40 ± 0.73		**Beta:**	44.28 ± 0.07	

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030203180516-~~C23~~ 60	Unknown	-0.33	0.33	12.70	87.17	15.07	24.22
20030203182508-~~C24~~ 61	Unknown	-0.33	0.33	112.21	213.64	75.30	125.71
20030203182508-~~C24~~ 62	Unknown	-0.33	0.33	12.70	145.89	18.97	24.22
20030203182508-~~C24~~ 63	Unknown	-0.33	0.33	27.03	132.99	27.99	41.75
20030203182618-~~C25~~ 64	Unknown	-0.33	0.33	12.70	62.33	13.08	24.22

Reviewed by: _____

Tan Smear Report

COPY

Batch ID:	smear - 200302031815	**Count Date:**	2/3/03
Group:	E	**Count Minutes:**	1.0
Device:	LB5100 #324920	**Count Mode:**	Simultaneous
Batch Key:	5,385	**Operating Volts:**	1320
Selected Geometry:	1/4" Stainless Steel		
Survey Location:	CAMERA IN LAST ROOM		

Background (cpm)			Efficiency (%)		
Alpha Rate:	0.10 ± 0.10		**Alpha:**	29.90 ± 0.23	
Beta Rate:	5.40 ± 0.73		**Beta:**	44.28 ± 0.07	

Sample ID	Sample Type	Alpha (dpm)	Unc	Alpha MDA (dpm)	Beta (dpm)	Unc	Beta MDA (dpm)
20030203181514-~~E18~~67	Unknown	-0.33	0.33	12.70	4,373.56	99.78	24.22
20030203182845-~~E19~~68	Unknown	16.39	7.49	12.70	3,318.90	86.91	24.22

Reviewed by: _____

CONTAINER TRANSPORTATION REPORT
DRUM WASTE PROFILE SHEET

86926

OLD Container Information

Container Identification:	IDRF741202484	
Swepp Barcode:	032696	
Shipping Category:	1001300190	
Test Category:	N	
TRUCON Content Code:	ID211A	
Package Date:	09-mar-1983	
Gross Weight:	201.4 kg	444.0 lbs
Gross Weight Error:	0.9 kg	2.0 lbs
Waste Weight:		
Seal Number:	02484	
Alpha Contam. (dpm):	0.0	
Beta/Gamma Contam. (dpm):	0.0	
Neutron Dose Rate (mrem/hr):	0.0	
Surface Dose Rate (mrem/hr):	2.5	

Unaffected Data Information

Content Code:	001
Container Type:	001
Handling Code:	CH
Volume Utilized (percent):	70

Nuclide	Mass (g)	Mass Error (g)
AM241	0.43124	0.17832
PU238	0.00014	0.00008
PU239	1.27359	0.52867
PU240	0.07745	0.0328
PU241	0.00234	0.00106
PU242	0.00058	0.00038
U234	0.02446	0.0134
U235	9.30432	3.83379
U238	4353.71338	1815.10901

Total PU (g):	1.3541
Fissile Gram Equivalent (Pu239):	10.59301
Fissile Gram Equivalent Error (Pu239):	4.36934
Thermal Power (watts):	0.05319
Thermal Power Error (watts):	0.02199
Total Alpha Activity (Ci):	1.59844
Total Alpha Activity Error (Ci):	0.66064
Plutonium Equivalent (Ci):	1.59655

All radio-assay data is the most recent data.

The assay values have been adjusted per EDF RWMC-840 (rev. 3) to incorporate the gamma spec results. For EPA Hazardous Waste Code, Hazardous Constituents, or Hazardous Characteristics, please refer to Engineering Design File (EDF) serial number: RWMC-803.

RWMC Signature	Role	Date
[signature]	TCO	03/25/02

ANL-W Signature		Date

JGE-01-2003

MEMORANDUM INTEROFFICE

INEEL
Idaho National Engineering & Environmental Laboratory

Date: February 13, 2003

To: Gary Lusk MS 9206 6-4165

From: John Eisenmenger MS 7113 3-4091

Subject: Alpha results "TAN TRUPAC-157 smears"
Lab Sgroup: 01DQ

Five smears were received from TRUPACT-157 by the TRA radioanalytical laboratory. Smears 1 and 4 (from drum #6) were composited into one sample and Smears 7, 2 and 7 (from ICV) were composited into another sample. The samples were analyzed for U234, U235, U238, Pu238, Pu239/240, and Am241 using ACMM-3816. The procedure consists of spiking with isotopic tracers, ashing, digesting with acid and fusing with lithium metaborate. The elements of interest are next separated, purified and mounted for counting by alpha spectroscopy using surface barrier detectors.

A matrix blank (consisting of the same smear material that was used for Smears 7, 2 and 7) and a matrix control (blank filters spiked with known solutions of isotopes of interest) were run with the samples. The samples results were blank subtracted. The control results were within our acceptance criteria.

The results for the samples are attached.

Analysis by:

John Eisenmenger
Radiochemist

Reviewed by:

Brian K. Schuetz
Radiochemist

cc:

	Anita Freeman	MS 7111
	Rod Hand	MS 5210
	Sorenson D J	MS 9208
	Clements Thomas	MS 2510
	Edelmayer John	MS 3428

Uniform File Code: 6404
Disposition Authority: ENV5-c-1
Retention Schedule: Destroy in 75 years
Note: Original disposition authority, retention schedule, and Uniform Filing Code applied by sender may not be appropriate for all recipients. Make adjustments as needed.

ENVIRONMENTAL RESTORATION PROGRAM
RADIOANALYTICAL ANAL S DATA PACKAGE

Lab Name: ALDTRA

Report No.: JGE-01-2003

Case No: N/A

SDG No.: NA

INEL ID	Lab Sample ID	Sample Matrix	Anal Type	Sample Value	Sample Uncer	Units	Anal Date	Sample Date	Sample Size	Chem Yield	Detector ID	MDA	DQF
SMEARS 1 & 4	01DQ-01-A	Smear	U234	+8.84E-03	+1.75E-02	pCi/spl	02/13/03	01/30/03	1	93.1	09	+2.94E-02	
SMEARS 1 & 4	01DQ-01-A	Smear	U235	-1.01E-03	+2.79E-03	pCi/spl	02/13/03	01/30/03	1	93.1	09	+2.28E-02	
SMEARS 1 & 4	01DQ-01-A	Smear	U238	+1.55E-02	+1.37E-02	pCi/spl	02/13/03	01/30/03	1	93.1	09	+1.95E-02	
SMEARS 1 & 4	01DQ-01-A	Smear	PU238	+1.18E+00	+1.36E-01	pCi/spl	02/13/03	01/30/03	1	100.1	27	+4.96E-02	
SMEARS 1 & 4	01DQ-01-A	Smear	PU239/240	+4.88E+01	+3.91E+00	pCi/spl	02/13/03	01/30/03	1	100.1	27	+6.02E-02	
SMEARS 1 & 4	01DQ-01-A	Smear	AM241	+4.86E+00	+4.28E-01	pCi/spl	02/13/03	01/30/03	1	90.7	29	+5.66E-02	
SMEARS 7,2&7	01DQ-02-A	Smear	U234	+1.43E-02	+1.75E-02	pCi/spl	02/13/03	01/28/03	1	84.7	11	+2.01E-02	
EARS 7,2&7	01DQ-02-A	Smear	U235	-2.18E-03	+4.21E-03	pCi/spl	02/13/03	01/28/03	1	84.7	11	+2.73E-02	
EARS 7,2&7	01DQ-02-A	Smear	U238	+7.84E-03	+1.21E-02	pCi/spl	02/13/03	01/28/03	1	84.7	11	+1.83E-02	
EARS 7,2&7	01DQ-02-A	Smear	PU238	+3.45E-02	+1.37E-02	pCi/spl	02/13/03	01/28/03	1	98.6	14	+2.24E-02	
SMEARS 7,2&7	01DQ-02-A	Smear	PU239/240	+1.28E+00	+1.52E-01	pCi/spl	02/13/03	01/28/03	1	98.6	14	+3.19E-02	
SMEARS 7,2&7	01DQ-02-A	Smear	AM241	+1.35E-01	+2.84E-02	pCi/spl	02/13/03	01/28/03	1	100.3	13	+1.61E-02	

Analyst: 00 62-13-03

See Key for Form I.

Comments: Reviewed by: B.K. Schultz 2/13/03

Idaho National Engineering and Environmental Laboratory

INEEL
Bechtel BWXT Idaho, LLC

INTEROFFICE MEMORANDUM

Date: February 5, 2003

To:	G. L. Lusk	MS 9206	6-4165
From:	T. C. Sorensen	MS 7111	3-4410

Subject: RML GAMMA-RAY ANALYSIS OF TAN TRUPAC-157 SMEAR SAMPLES (DATED 01/03) - TCS-003-03

Two sets of smear samples submitted by TAN Operations were counted/screened for radioactivity content by the Radiation Measurements Laboratory (RML) using standardized high resolution gamma-ray spectrometry techniques. The samples were counted for 12 hours in standardized sample geometry. The result of the analysis of the samples is listed on the attached Table 1.

Note: Please call if you have any questions or need additional Information.
T. C. Sorensen 3-4410 or Anita Freeman 3-4158

Attachments:
As Stated

cc: A. L. Freeman, MS 7111
C. C. Jensen, MS 7113
C. D. Morgan, MS 7110
R. K. Murray, MS 7111
D. J. Sorensen, MS 9208
T. C. Sorensen File

Bliss Sample Group Id: 01DQ

Uniform File Code: 6404
Disposition Authority: ENV5-c-1
Retention Schedule: Destroy record in 75 years

NOTE: Original disposition authority, retention schedule, and Uniform Filing Code applied by the sender may not be appropriate for all recipients. Make adjustments as needed.

INEEL
Idaho National Engineering & Environmental Laboratory

Just the FAX!

DATE: February 12, 2003

TO: Bobby A. Picker
CO./DEPT: PROJECT MGMT.
PHONE NO.: 526-1549
FAX NO.: 526-4902

FROM: Anita L. Freeman
CO.: TRA Radioanalytical
PHONE NO: (208) 533-4158
FAX NO.: (208) 533-4488

SUBJECT: TAN TRUPAC-157 SMEARS

Attached is a copy of the gamma data for the TAN Trupac-157 smears.

TCS-003-03

Radiochemistry is currently counting these samples. John Eisenmenger (3-4091) said he will call you regarding the actinides.

TABLE 1

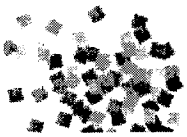
RADIATION MEASUREMENTS LABORATORY

GAMMA-RAY SCREEN ANALYSIS RESULTS

TAN TRUPAC-157 SMEAR SAMPLES 01/2003

Sample ID	RML ID	Manmade Radionuclides	Activity pCi/smpl	
DRUM 6 Smears 1, 4	A6020403036	Cs-137	(4.3 ± 0.6)E+00	= 9.5 dpm
ICV Smears 7, 2, 7	D5020403037	Co-60	(2.4 ± 0.6)E+00	= 5.3 dpm
		Cs-137	(2.6 ± 0.7)E+00	= 5.8 dpm

Notes:
1. A "None detected" under "Manmade Radionuclides" means that the analyst determined that no manmade true-positive radionuclides were present in the respective sample(s).
2. The uncertainty associated with any reported activity includes the statistical uncertainty and estimated uncertainties in detector efficiency and the sample geometry (both are typically 5%). Uncertainties are propagated in quadrature and expressed as one standard deviation.
3. When a sample's matrix differs radically from that of the calibration standard used by the RML, the measured activity may not accurately represent the true radionuclide concentration in that sample. In such cases, a non-zero estimated bias is applied in place of the estimated sample geometry; this bias is not propagated into the total uncertainty and is listed separately.



Cecilia R Hoffman

02/10/03 03:47 PM

To: Thomas L Clements/TLC/CC01/INEEL/US@INEL
cc:
Fax to:
Subject: IDRF741202484

Sorry for the delay, I had software problems this morning.

Attached is the analysis of IDRF741202484. Please call me at 6-4909 if you have any questions.

Cecilia

Analysis of IDRF741202484.doc

Analysis of IDRF741202484

Two different methods were compared against SAS V. 3.2

1) SAS version 3.3.1
2) SRAC (INEEL's absolute analysis code - the stand-alone version of SAP)

SAS V. 3.3.1

a) SAS V. 3.3.1 was not implemented on the PAN system.
b) This version improved on the uranium algorithm process.
c) The mass ratio gamma data was reanalyzed.
d) The analysis results were identical to SAS V. 3.2.
e) The material is weapons grade plutonium based on the Pu-241/Pu-239.
f) Pu-241/Pu-239 mass ratio is 0.19%.
g) Pu-238/Pu-239 mass ratio was 0.00
h) The uncertainty associated with Pu-240 is approximately 100%.
i) The uncertainty associated with Pu-238 is 40%.
j) There is approximately 1.4 grams of Pu of which 1.3 grams are Pu-239.
k) The drum primarily contains depleted uranium (4.4 g).
l) U-235 is present at approximately 9 grams
m) Am-241 was determined from the Am-241/U-235 mass ratio and it's mass 0.4 g.
n) The FGE content is 10.6 grams
o) The TRU alpha activity is 1.6 Ci

SRAC (stand-alone SAP)

a) This method relies on a gamma assay to quantify the radioisotopes present in the waste.
b) The analysis results were similar to SAS V. 3.2 when the statistical uncertainty is taken into account.
c) There is 1.9 grams of plutonium with 1.8 being Pu-239.
d) Uranium-238 is present in approximately 4.9 grams.
e) The drum primarily container U-238, or depleted uranium.
f) U-235 is present in 9.4 grams.
g) The FGE content is 11.2 grams.
h) The TRU alpha activity is 2.2 Ci.

Reviewing the spectral data indicates that Np-237 is present in a very small quantity (less than 1E-10 grams).
Europium-154 is present in a small quantity (less than 1E-10 grams).

Program: SWEPP Assay System, Version 3.2.1
Chamber: Drum Assay Chamber
File: D:\Assaysys\DAC\prod\IDRF741202484.001

Report printed Mon Feb 17 15:39:55 2003
Active data acquired Wed Mar 06 17:08:56 2002
Passive data acquired Wed Mar 06 17:10:32 2002
Background data acquired Wed Mar 06 08:21:22 2002
Gamma data acquired Wed Mar 06 15:14:00 2002

Recalculation using parameters stored in file.

Container:
Identifier: IDRF741202484
Type: 55 gallon drum
Volume: 208.0 liter

Content:
Code: 1
Type: First-Stage Sludge / Combined Sludge
Net Weight: 180.5 kg

Bias Correction:
Coefficients:
B0 = (0.0 ± 0.0) B1 = (1.550 ± 0.136) B2 = (0.0 ± 0.0)
COV(B0, B1) = 0.0 COV(B0, B2) = 0.0 COV(B1, B2) = 0.0
Contribution to total Pu mass uncertainty: ± 0.119 g

Matrix Precision:
Coefficients: A0 = 0.0 A1 = 0.40 A2 = 0.0
Contribution to total Pu mass uncertainty: ± 0.54 g

Measurement Results:
Total Pu mass: (1.35 ± 0.56<0.09>) g (Note 1)
U-234 mass: (0.0245 ± 0.0134) g (Note 2)
U-235 mass: (9.3 ± 3.8) g
U-238 mass: (4.35 ± 1.82)E+3 g
Pu-238 mass: (1.42 ± 0.81)E-4 g (Note 3)
Pu-239 mass: (1.27 ± 0.53) g
Pu-240 mass: (0.077 ± 0.033) g
Pu-241 mass: (2.34 ± 1.06)E-3 g
Pu-242 mass: (5.8 ± 3.8)E-4 g
Am-241 mass: (0.431 ± 0.178) g (Note 4)
Thermal power: (0.053 ± 0.022) Watts
Thermal power density: (7.2 ± 3.0)E-3 Watts/ft**3
Total activity: (1.84 ± 0.76) Ci
Alpha activity: (1.60 ± 0.66<0.09>) Ci
TRU activity: (1.60 ± 0.66) Ci
TRU activity concentration: (8.8 ± 3.7)E+3 nCi/g
Pu Equivalent Curies: (1.60 ± 0.66) Ci
Fissile Gram Equivalent: (10.6 ± 4.4) g

Notes:
1 - Determined from Active Assay data.
2 - Determined from process knowledge.
3 - Default mass fractions used for Pu isotopic masses.
4 - Determined from U-235 Mass Ratio.

Appendix B

TRUPACT-II 157 Payload #6469 Assembly Documents

Electronic Copy of Appendix B

Payload Assembly Transportation Certification Document, PATCD

Pack:PK102013

WWIS Payload Num: 6469

Shipment Num:IN020271
TRUPACT OCA Body Num:157
TRUPACT OCA Lid Num:157

Date ICV Closed:22-AUG-2002 00:00
Current Date:23-AUG-2002 12:55
Contact Dose Rate (mrem/hr):.5
2 Meter Dose Rate (mrem/hr):.5
Cab Dose Rate (mrem/hr):
Type of Payload:Drums

Trailer Number:20

Payload Wgt + Err (lb):5714
Pallet, etc Wgt (lb):265
Total Payload Wgt (lb):5979
TRUPACT Wgt (lb):12731
Loaded TRUPACT Wgt (lb):18710
Trailer Position:B

TOP Subassembly:IN021909

Pos	Waste Container	IDC	Weight (lb)	Err	FGE (g)	Err	Decay Heat (W)	Err
1	IDRF004102254	376	126	2	44.0321	8.4488	0.1197	0.0175
2	IDRF004102263	376	132	2	43.2914	8.2743	0.1056	0.0166
3	IDRF004002801	376	137	2	43.5645	8.3246	0.1063	0.0167
4	IDRF004101890	376	143	2	43.5543	8.3790	0.1335	0.0182
5	IDRF004002790	376	160	2	42.8177	8.1795	0.1157	0.0169
6	IDRF741202484	001	473	2	10.5930	4.3693	0.0532	0.0220
7	IDRF741202088	001	499	2	5.5018	2.2747	0.0137	0.0057
		Subtotals:1670		5	233.3548			

BOTTOM Subassembly:IN021910

Pos	Waste Container	IDC	Weight (lb)	Err	FGE (g)	Err	Decay Heat (W)	Err
8	IDRF741205405	001	516	2	20.1167	8.2684	0.2365	0.0973
9	IDRF741201615	001	545	2	2.4350	1.0469	0.0732	0.0312
	IDRF741201718	001	577	2	7.2532	3.0120	0.0038	0.0016
	IDRF074221338	002	584	2	1.2985	0.5860	0.0047	0.0021
	IDRF074700394	007	591	2	2.1340	0.9197	0.0114	0.0049
13	IDRF074700411	007	612	2	0.4436	0.2358	0.0010	0.0005
14	IDRF741204650	001	612	2	2.3632	0.9965	0.0104	0.0044
		Subtotals:4037		5	36.0442			
		Totals:5707		7	269.3990	21.2437		

Proc:TPR 1648 TRUPACT-II Assembly Operation Rev:20

Bot Wgt >= Top Wgt ☒
Total Wgt plus Err <= 7265 lb ☒
Fissile Mass (Pu-239 FGE) plus 2 X Err <= Limit ☒

Top Wgt (lb):1670
Top Wgt Err (lb):5
Top Wgt + Err (lb):1675

Bot Wgt (lb):4037
Bot Wgt Err (lb):5
Bot Wgt + Err (lb):4042

Total Payload Wgt (lb):5707
Top Wgt + Bot Wgt + Palette Wgt (lb):5972
Total Payload Wgt Err (lb):7
Total Payload Wgt + Err (lb):5979

Total FGE (g):269.3990
Total FGE Err (g):21.2437
2 X Total FGE Err (g):42.4874
Total FGE + 2 X FGE Err (g):311.8864

Store Close

0000011

B-1

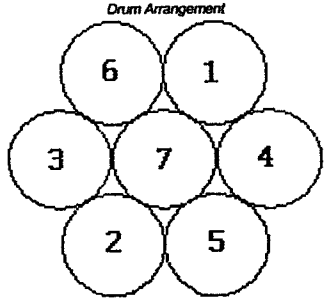
COPY

Payload Assembly, Configure 14-Pack

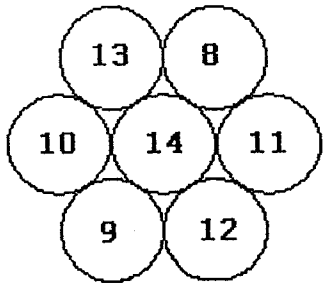
Assembly/Pack Number:PK102013 — Date:15-AUG-2002 22:18

	Pos	Container Number	IDC	Weight (lb)	Err	DoseRate (mrem/hr)	FGE (g)	Err	DecayHeat (W)	Err
Subassembly Number IN021909	1	IDRF004102254	376	126	2	2	44.0321	8.4488	0.1197	0.0175
	2	IDRF004102263	376	132	2	5.5	43.2914	8.2743	0.1056	0.0166
	3	IDRF004002801	376	137	2	1.5	43.5645	8.3246	0.1063	0.0167
	4	IDRF004101890	376	143	2	4	43.5543	8.3790	0.1335	0.0182
	5	IDRF004002790	376	160	2	3	42.8177	8.1795	0.1157	0.0169
	6	IDRF741202484	001	473	2	0	10.5930	4.3693	0.0532	0.0220
	7	IDRF741202088	001	499	2	1	5.5018	2.2747	0.0137	0.0057
				Subtotals:1670	5	17	233.3548			
Subassembly Number IN021910	8	IDRF741205405	001	516	2	19	20.1167	8.2684	0.2365	0.0973
	9	IDRF741201615	001	545	2	20	2.4350	1.0469	0.0732	0.0312
	10	IDRF741201718	001	577	2	.1	7.2532	3.0120	0.0038	0.0016
	11	IDRF074221338	002	584	2	.2	1.2985	0.5860	0.0047	0.0021
	12	IDRF074700394	007	591	2	.5	2.1340	0.9197	0.0114	0.0049
	13	IDRF074700411	007	612	2	0	0.4436	0.2358	0.0010	0.0005
	14	IDRF741204650	001	612	2	0	2.3632	0.9965	0.0104	0.0044
				Subtotals:4037	5	39.8	36.0442			
				Pallet, etc Weight (lb):265				2 X Err		
				Total Assembly:5972	7	56.8	269.3990	42.4874		
				Totals, including Errors:5979			311.8864			
				Limits, including Errors:6545		200	325.0000			

Drum Arrangement



Top 7 Drums



Bottom 7 Drums

Note : Drum 1 is the lightest
Drum 14 is the heaviest

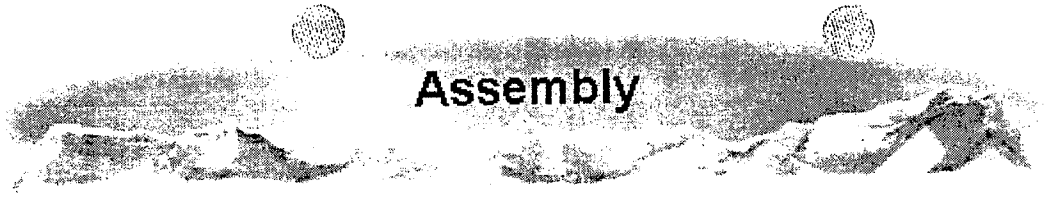
Add Dunnage | Remove Dunnage | Save Config | Cancel

Shipment # IN020271(b) Rev. # 0
TRUPACT #: 157
ETRAMPAC Payload ID# 6464
Tractor # _____ Trailer # 20

Trucking Company: TRI-STATE or CAST
TCO: _____ Date: 9/16/02

B-2

0000012



- Main Menu
- Assembly Menu
- Create Payload
- Create Shipment
- Report Menu

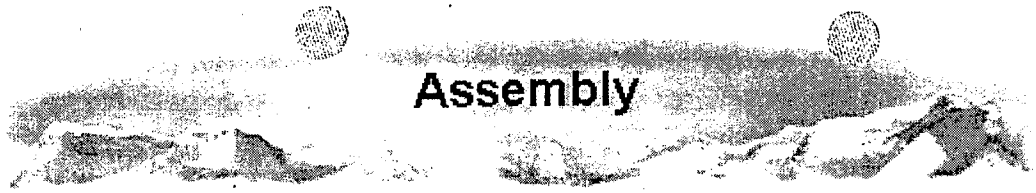
Assembly Type: 55-Gallon Drum

Assembly ID: IN021910

Container ID Click to Remove	Shipping Category	Weight / Error	FGE / 2x Error	Decay Heat / Error
IDRF074221338	1001300190	584.1045 / 2.0066	1.3 / 1.1800	0.0047 / 0.0021
IDRF074700394	1001300190	591.0944 / 2.0066	2.13 / 1.8400	0.0114 / 0.0049
IDRF074700411	1001300190	612.108 / 2.0066	0.44 / 0.4800	0.001 / 0.0005
IDRF741201615	1001300190	545.0981 / 2.0066	2.43 / 2.1000	0.0732 / 0.0312
IDRF741201718	1001300190	577.0926 / 2.0066	7.25 / 6.0200	0.0038 / 0.0016
IDRF741204650	1001300190	612.108 / 2.0066	2.36 / 2.0000	0.0104 / 0.0044
IDRF741205405	1001300190	516.0803 / 2.0066	20.12 / 16.5400	0.2365 / 0.0973
Total		4037.686	36.03	

Mark as complete ☐ OK

0000013



- Main Menu
- Assembly Menu
- Create Payload
- Create Shipment
- Report Menu

Assembly Type: 55-Gallon Drum

Assembly ID: IN021909

Container ID Click to Remove	Shipping Category	Weight / Error	FGE / 2x Error	Decay Heat / Error
IDRF004002790	3001090528	160.0169 / 2.0066	42.82 / 16.3600	0.1157 / 0.0169
IDRF004002801	3001090528	137.0187 / 2.0066	43.56 / 16.6400	0.1063 / 0.0167
IDRF004101890	3001090528	143.0163 / 2.0066	43.55 / 16.7600	0.1335 / 0.0182
IDRF004102254	3001090528	126.0158 / 2.0066	44.03 / 16.9000	0.1197 / 0.0175
IDRF004102263	3001090528	132.0134 / 2.0066	43.29 / 16.5400	0.1056 / 0.0166
IDRF741202088	1001300190	499.0797 / 2.0066	5.5 / 4.5400	0.0137 / 0.0057
IDRF741202484	1001300190	473.0828 / 2.0066	10.59 / 8.7400	0.0532 / 0.0220
Total		1670.244	233.34	

Mark as complete ☐ OK

0000014

Payload Assembly Transportation Certification Document, PATCD

Pack:PK102013

WWIS Payload Num: 6469

Shipment Num:IN020271
TRUPACT OCA Body Num:157
TRUPACT OCA Lid Num:157

Date ICV Closed:
Current Date:22-AUG-2002 19:59
Contact Dose Rate (mrem/hr):
2 Meter Dose Rate (mrem/hr):
Cab Dose Rate (mrem/hr):
Type of Payload:Drums

Trailer Number:20

Payload Wgt + Err (lb):5714
Pallet, etc Wgt (lb):265
Total Payload Wgt (lb):5979
TRUPACT Wgt (lb):12731
Loaded TRUPACT Wgt (lb):18710
Trailer Position:B

TOP Subassembly:IN021909

Pos	Waste Container	IDC	Weight (lb)	Err	FGE (g)	Err	Decay Heat (W)	Err
1	IDRF004102254	376	126	2	44.0321	8.4488	0.1197	0.0175
2	IDRF004102268	376	132	2	43.2914	8.2743	0.1056	0.0166
3	IDRF004002801	376	137	2	43.5645	8.3246	0.1063	0.0167
4	IDRF004101890	376	143	2	43.5543	8.3790	0.1335	0.0182
5	IDRF004002790	376	160	2	42.8177	8.1795	0.1157	0.0169
6	IDRF741202484	001	473	2	10.5930	4.3693	0.0532	0.0220
7	IDRF741202088	001	499	2	5.5018	2.2747	0.0137	0.0057
	Subtotals:1670			5	233.3548			

BOTTOM Subassembly:IN021910

Pos	Waste Container		Weight (lb)	Err	FGE (g)	Err	Decay Heat (W)	Err
8	IDRF741205405	001	516	2	20.1167	8.2684	0.2365	0.0973
9	IDRF741201615	001	545	2	2.4350	1.0469	0.0732	0.0312
10	IDRF741201719	001	577	2	7.2532	3.0120	0.0038	0.0016
11	IDRF074221338	002	584	2	1.2985	0.5860	0.0047	0.0021
12	IDRF074700394	007	591	2	2.1340	0.9197	0.0114	0.0049
13	IDRF074700413	007	612	2	0.4436	0.2358	0.0010	0.0005
14	IDRF741204650	001	612	2	2.3632	0.9965	0.0104	0.0044
	Subtotals:4037			5	36.0442			
	Totals:5707			7	269.3990	21.2437		

Proc:TPR 1648 TRUPACT-II Assembly Operation Rev:20

Bot Wgt >= Top Wgt ☒
Total Wgt plus Err <= 7265 lb ☒
Fissile Mass (Pu-239 FGE) plus 2 X Err <= Limit ☒

Top Wgt (lb):1670
Top Wgt Err (lb):5
Top Wgt + Err (lb):1675

Bot Wgt (lb):4037
Bot Wgt Err (lb):5
Bot Wgt + Err (lb):4042

Total Payload Wgt (lb):5707
Top Wgt + Bot Wgt + Palette Wgt (lb):5972
Total Payload Wgt Err (lb):7
Total Payload Wgt + Err (lb):5979

Total FGE (g):269.3990
Total FGE Err (g):21.2437
2 X Total FGE Err (g):42.4874
Total FGE + 2 X FGE Err (g):311.8864

Store Close

B-5

Witnessed loading
VD Bowman
8/22/02

000015

Shipment Summary Report

TRUPACT Number: 157 | ICV Closure Date: 08/22/2002 | DOT Description: Waste Radioactive Material, Fissile, N.O.S, 7, UN2918

Assembly	Container Number	Total Dose Rate (mR/hr)	Hazardous Codes	Radionuclides	Total Activity (TBq)	PE Curies	Weight (kg)
IN021910	IDRF074221338	.2	D004 D005 D006 D007 D008 D009 D010 D011 D022 F001 F002 F005 F006 F007 F009	/*AM-241 CS-137 PU-238 PU-239 PU-240 PU-241 PU-242 SR-90 U-234 U-235 U-238*/ U-233	9.355E-03	1.431E-01	264.90
	IDRF074700394	.5	D006 D007 D008 D009 D010 D011 D032 F001 F002 F005 F006 F007 F009	/*AM-241 CS-137 PU-238 PU-239 PU-240 PU-241 PU-242 SR-90 U-234 U-235 U-238*/ U-233	2.188E-02	3.475E-01	268.07
	IDRF074700411	0	D006 D007 D008 D009 D010 D011 D032 F001 F002 F005 F006 F007 F009	/*AM-241 CS-137 PU-238 PU-239 PU-240 PU-241 PU-242 SR-90 U-234 U-235 U-238*/ U-233	3.349E-03	3.171E-02	277.60
	IDRF741201615	20	D004 D005 D006 D007 D008 D009 D010 D011 D022 F001 F002 F005 F006 F007 F009	/*AM-241 CS-137 PU-238 PU-239 PU-240 PU-241 PU-242 SR-90 U-234 U-235 U-238*/ U-233	8.369E-02	2.190E+00	247.21
	IDRF741201718	.1	D004 D005 D006 D007 D008 D009 D010 D011 D022 F001 F002 F005 F006 F007 F009	/*AM-241 CS-137 PU-238 PU-239 PU-240 PU-241 PU-242 SR-90 U-234 U-235 U-238*/ U-233	5.010E-03	1.096E-01	261.72
	IDRF741204650	0	D004 D005 D006 D007 D008 D009 D010 D011 D022 F001 F002 F005 F006 F007 F009	/*AM-241 CS-137 PU-238 PU-239 PU-240 PU-241 PU-242 SR-90 U-234 U-235 U-238*/ U-233	1.863E-02	3.174E-01	277.60
	IDRF741205405	19	D004 D005 D006 D007 D008 D009 D010 D011 D022 F001 F002 F005 F006 F007 F009	/*AM-241 PU-238 PU-239 PU-240 PU-241 PU-242 U-234 U-235*/ CS-137 SR-90 U-233 U-238	3.914E-01	7.168E+00	234.05
				Assembly: /*AM-241 PU-238 PU-239 PU-240 PU-241 PU-242 U-234 U-235 CS-137 SR-90 U-238*/ U-233	*5.333E-01*	*1.031E+01*	*1,831.15*
				TRUPACT : /*PU-238 PU-239 PU-240 PU-241 PU-242 CS-137 SR-90 AM-241 U-234 U-235 U-238*/ U-233	*2.833E+00*	*3.081E+01*	*2588.63*
WSPFs: INW211.001, INW216.001, INW218.001				Shipment : /*PU-238 PU-239 PU-240 PU-241 PU-242 CS-137 SR-90 AM-241 U-234 U-235 U-238*/ U-233	6.053E+00	6.807E+01	5,072.05

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67.00000

Shipment Summary Report

TRUPACT Number: 157

ICV Closure Date: 08/22/2002

DOT Description: Waste Radioactive Material, Fissile, N.O.S, 7, UN2918

Dose Rate 1m: .5

2m: .5

Surface: .5

Assembly	Container Number	Total Dose Rate (mR/hr)	Hazardous Codes	Radionuclides	Total Activity (TBq)	PE Curies	Weight (kg)
IN021909	IDRF004002790	3	D005 D007 D008 D009 D011 D022 F001 F002 F005 F006 F007 F009	/*AM-241 CS-137 PU-238 PU-239 PU-240 PU-241 PU-242 SR-90*/ U-233 U-234 U-235 U-238	4.376E-01	3.682E+00	72.57
	IDRF004002801	1.5	D005 D007 D008 D009 D011 D022 F001 F002 F005 F006 F007 F009	/*CS-137 PU-238 PU-239 PU-240 PU-241 PU-242 SR-90*/ AM-241 U-233 U-234 U-235 U-238	4.325E-01	3.404E+00	62.14
	IDRF004101890	4	D005 D007 D008 D009 D011 D022 F001 F002 F005 F006 F007 F009	/*AM-241 CS-137 PU-238 PU-239 PU-240 PU-241 PU-242 SR-90*/ U-233 U-234 U-235 U-238	4.627E-01	4.219E+00	64.86
	IDRF004102254	2	D005 D007 D008 D009 D011 D022 F001 F002 F005 F006 F007 F009	/*AM-241 CS-137 PU-238 PU-239 PU-240 PU-241 PU-242 SR-90*/ U-233 U-234 U-235 U-238	4.508E-01	3.807E+00	57.15
	IDRF004102263	5.5	D005 D007 D008 D009 D011 D022 F001 F002 F005 F006 F007 F009	/*CS-137 PU-238 PU-239 PU-240 PU-241 PU-242 SR-90*/ AM-241 U-233 U-234 U-235 U-238	4.298E-01	3.383E+00	59.87
	IDRF741202088	1	D004 D005 D006 D007 D008 D009 D010 D011 D022 F001 F002 F005 F006 F007 F009	/*AM-241 CS-137 PU-238 PU-239 PU-240 PU-241 PU-242 SR-90 U-234 U-235 U-238*/ U-233	1.826E-02	4.114E-01	226.34
	IDRF741202484	0	D004 D005 D006 D007 D008 D009 D010 D011 D022 F001 F002 F005 F006 F007 F009	/*AM-241 CS-137 PU-238 PU-239 PU-240 PU-241 PU-242 SR-90 U-234 U-235 U-238*/ U-233	6.815E-02	1.596E+00	214.55
				Assembly: /*CS-137 PU-238 PU-239 PU-240 PU-241 PU-242 SR-90 AM-241 U-234 U-235 U-238*/ U-233	*2.300E+00*	*2.050E+01*	*757.48*

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8400000

Table 6.2-1

Payload Assembly Transportation Certification Document (PATCD)[a]

IDENTIFICATION PARAMETERS

Shipment #:	IN020271
Payload Assembly #:	6469
Packaging OCA Body/Lid #:	157
Governing Payload Shipping Category:	N/A
Governing Payload Shipping Category Decay Heat Limit:	N/A
Governing Hydrogen/Flammable Gas Generation Rate Limit:	N/A
Type of Payload:	55-Gallon
Date ICV Closed:	8/22/02

TOP PAYLOAD ASSEMBLY COMPOSITION

Container ID	Weight (lbs)	Error (lbs)	Decay Heat (watts)	Error (watts)	Fissile Mass (FGE)	2x Error (FGE)	Hydrogen Flammable Gas Generation Rate	Flammability Index
IDRF004002790	160.0	2.01	0.12	0.0169	42.82	16.36	1.91E-10	1261
IDRF004002801	137.0	2.01	0.11	0.0167	43.56	16.64	2.62E-10	1730
IDRF004101890	143.0	2.01	0.13	0.0182	43.55	16.76	1.40E-10	924
IDRF004102254	126.0	2.01	0.12	0.0175	44.03	16.90	1.85E-10	1221
IDRF004102263	132.0	2.01	0.11	0.0166	43.29	16.54	6.26E-10	4133
IDRF741202088	499.1	2.01	0.01	0.0057	5.50	4.54	1.85E-09	3141
IDRF741202484	473.1	2.01	0.05	0.0220	10.59	8.74	7.17E-09	12200
Subtotal (B)	1670.2		0.65		233.34			
Subtotal RMS Error (D)		5.3						

BOTTOM PAYLOAD ASSEMBLY COMPOSITION

Container ID	Weight (lbs)	Error (lbs)	Decay Heat (watts)	Error (watts)	Fissile Mass (FGE)	2x Error (FGE)	Hydrogen Flammable Gas Generation Rate	Flammability Index
IDRF074221338	584.1	2.01	0.00	0.0021	1.30	1.18	6.31E-10	1074
IDRF074700394	591.1	2.01	0.01	0.0049	2.13	1.84	1.54E-09	2615
IDRF074700411	612.1	2.01	0.00	0.0005	0.44	0.48	1.36E-10	232
IDRF741201615	545.1	2.01	0.07	0.0312	2.43	2.10	9.86E-09	16779
IDRF741201718	577.1	2.01	0.00	0.0016	7.25	6.02	5.08E-10	865
IDRF741204650	612.1	2.01	0.01	0.0044	2.36	2.00	1.41E-09	2395
IDRF741205405	516.1	2.01	0.24	0.0973	20.12	16.54	4.38E-10	746
Subtotal (A)	4037.7		0.34		36.03			
Subtotal RMS Error (C)		5.3						

PAYLOAD TOTALS

Weight of Pallets, Reinforcing Plates, Slip Sheets, Guide Tubes, Adjustable Slings, etc. (E) 265 lbs.

Total (A+B+E) Weight 5972.9 lbs.

Total (A+B) Decay Heat 0.9887 Watts

Total (A+B) Fissile Mass 269.3700 FGE

Total RMS Weight Error 7.5 lbs.

Total RMS Decay Heat Error 0.1117 Watts

Total RMS Fissile Mass Error 42.4835 FGE

Bottom Assembly Weight + Subtotal RMS Error (A+C) 4042.99 lbs.

Top Assembly Weight + Subtotal RMS Error (B+D) 1675.55 lbs.

Total Weight + Total RMS Error 5980.4 lbs.

Total Fissile Mass + Total RMS Error 311.8535 FGE

0000110

Total Decay Heat + RMS Error **1.1004** watts

PAYLOAD CERTIFICATION PARAMETERS

Parameter	Initials
Decay Heat + Error of Each Analytical Category Payload Container Less Than or Equal to Governing Limit	MN
Hydrogen/Flammable Gas Generation Rate of Each Test Category Payload Container Less Than or Equal to Governing Limit	MN
Flammability Index of Each Payload Container Less Than or Equal to 50,000	MN
Bottom Weight Greater Than or Equal to Top Weight	MN
Total Weight plus RMS Error Less Than or Equal to 7265 lbs.	MN
Decay Heat plus RMS Error Less Than or Equal to 40 Watts	MN
Fissile Mass (Pu-239 FGE) plus RMS Error Less Than or Equal to **325** FGE	MN

I certify that the above payload assembly meets all the requirements for shipment as stated in the TRAMPAC, current revision. The payload assembly is approved for shipment.

Michael E. Graham / 8-23-02

TRANSPORTATION CERTIFICATION OFFICIAL / **DATE**

a Follow instructions in Section 6.2

0000111

Appendix C

Operating Procedures for Recovery Operations

Electronic Copy of Appendix C

:8/2001
v. 06

PRE-JOB BRIEFING CHECKLIST

Job Title: TRUPACT 157 OPERATIONS Procedure or Tracking #: TPR-6230

Name/Title of Person Conducting Briefing: K. KENNISTON Date/Time: 1-23-03 / 1000

The objective of a good pre-job briefing is to communicate an understanding of scope, hazards, and mitigation to enable the safe completion of work. Follow MCP-3003 for requirements. Additional Radiological Work Permit requirements found in box 10, page 2.

Initial each box upon completion of the section during the pre-job briefing. Mark N/A in the comment box if this section is not applicable to this job.	Initials
1. Discuss Scope of Work to be Performed and Limiting Conditions	KK
Comments:	
2. Review Hazards of the Job and Mitigation of those Hazards (JSA's, Permits, LO/TO)	KK
Comments:	
3. Review Work Procedures and Initial Conditions Involved	KK
Comments:	
Discuss Emergency Escape Routes	KK
Comments:	
5. Discuss Roles and Responsibilities, Stop Work, Training, and Work Restrictions	KK
Comments:	
6. Discuss Needed Tools and Equipment	KK
Comments:	
7. Discuss Safety, Radiological (see box 10), Environmental Requirements/Wastes	KK
Comments:	
8. Discuss Error Likely/Feedback/Lessons Learned	KK
Comments:	
Summarize Scope, Hazards, and Responsibilities	KK
Comments:	

PRE-JOB BRIEFING CHECKLIST

Title: TRUPACT 157 PROCESSING Procedure or Tracking #: TOR-6230

10. Minimum Radiological Work Permit (RWP) Requirements	Additional Notes and Comments and other Building/Equipment/Process specific pre-job checklists covered.
Scope of work Radiological conditions of the workplace Procedural and RWP requirements Special radiological control requirements Radiologically limiting conditions (may void RWP) Radiological control hold points Communication & coordination with other groups Housekeeping and final cleanup provisions Emergency response provisions	

Print Names of Workers	Training (1)	Badge No.	Craft or Job Title	Company Name (If not INEEL)	Briefing Date	Worker's Initials (2)
JAKE GREEN	ML	78067	OPS		1-23-03	
RICK SORENSEN	NA	27571	RadCon		1-23-03	
Gary L. Lusk	NA	56428	RadCon		1-23-03	
Ryan Cook	NA	63544	OPS		1-23-03	
Nick Wadsworth	ML	52410	E.O.		1/23/03	
Jimmy Hernandez	ML	58172	Mech.		1/23/03	
Cody Arave	ML	60479	EO		1-23-03	
Rocky Allen	ML	56604	mech.		1-23-03	
Rob Bare	ML	37396	EO		1-23-03	
Rex Ginn	ML	33234	HEO		1-23-03	
Lyle McKinlay	ML	51945	R.C.T.		1-23-03	
Don D Chesterley	ML	62531	CARP		1-23-03	

(1) Supervisor initials to verify employee's required training for planned work is current. Mark N/A for not applicable.
(2) Worker's initials indicate attendance at the pre-job briefing and satisfactory understanding of all items discussed.

By my signature, I indicate that I have conducted the pre-job briefing covering all items indicated above concerning the requirements specified for the work to be performed.

Person Conducting Briefing: _____ Date/Time: 1-23-03 / 1100

3/2000
.01

PRE-JOB BRIEFING ATTENDANCE RECORD

Work Documentation Tracking/Procedure Number: TPR-6230

Attach filled out form to applicable work control/permit documentation prior to starting work OR file as required by area/organizational procedures. Make copies as necessary.

Print Names of Workers	Training (1)	S/Visitor Badge No.	Craft or Job Title	Company Name (2)	Briefing Date	Worker's Initials (3)
Ilene Harrell		45638	Ops		1/23/03	IH
BLAKE F McMURTREY		44306	CARPENTER		1-23-03	BFM
DARIS WEIMER		46876	OPS		1-23-03	DW
Lewis Bird		52447	RCT		1-23-03	LB
FARRELL BUSH		61058	RCT		1/23/03	FB
Jonathan Ely		86250	RCT		1/23/03	JE
Mel Saunders		40535	SO		1/23/03	MS
Kory Newsom		60271	Inst Tech		1/23/03	KN
ROBIN KILLIAN		77456	OPS		1/23/03	RK
RC JUSTICE		85504	QI		1/23/03	RCJ
MICHAEL GALASSI		67558	SO		1/23/03	MG
Jody L. Schmaedebeck		52993	SO		1-23-03	JLS
Jon D. Johnston		62673	RCT		1-23-03	JDJ
Tobin Mott		76252	IH		1/23/03	TM
Scott Hissom		59789	OPS		1/23/03	SH
Bruce SHively		39235	HEO		1-23-03	BS
JD Westfall		40730	Inst.		1-27-03	JDW
Leon LEON BUTLER		34647	HEO		1/27/03	LB

2/5/03

1. Supervisor initials block verifying employee's training required to complete the planned work is current, mark N/A for not applicable when special training (ES&H or other) not required.
2. Briefing attendee required to fill this block if other than company C-3 s, may leave blank for company employees.
3. Worker's initials to indicate attendance at pre-job briefing and s... understanding for all items discussed.

412.11
09/12/2002
Rev. 09

DOCUMENT MANAGEMENT CONTROL SYSTEM (DMCS)
DOCUMENT ACTION REQUEST (DAR)

1.	**Document ID: TPR-6230**	**Current Revision ID: 0**			**See Block 8 for DAR # Info.**
2.	Document Title: TRUPACT-157 UNLOADING AND LOADING RECOVERY OPERATIONS AT TAN				
3.	Requester: C. Posegagte	Phone: 6-0188	MS: 9602	E-mail: cposegat	S No.: 60227
4.	Type: ☒ Document ☐ Drawing	5. Type of action: ☐ Create ☒ Revise ☐ Cancel			
6.	Field Change: ☐ No ☒ Yes If Yes, will the change be: ☒ Permanent **or** ☐ Temporary? If Temporary, enter the field change duration:				

7. Proposed Action:

Item	Page No./ Section/Zone	Description	Justification
1	pg 7 stp 3.1.1	Add 'L Industrial Hygiene (IH)'	forgot to list
2	pg 8	Remove 'wall mounts #1 and 2'	Wall mounts #1 & 2 will not be used

8. Proposal Approval: ☒ Accepted ☐ Deferred ☐ Rejected **DAR No.:** 97129 (For Accepted Proposals Only!)

If rejected, indicate reason: _____

Document Owner Printed Name: Kevin Streeper Signature: for K Streeper Date: 11/27/02

Is this a minor document change? ☒ No ☒ Yes If Yes, proceed to Block 14. (For Operations procedures, go to Block 11.)

11/27/02

9. Management Approval (Excluding drawings, minor changes, & field changes):

Printed Name: P/A 11/27/02 Signature: P/A 11/27/02 Date: _____

10. Implementation Actions – Will the proposal require:

Hazard mitigation per MCP-3562 or MCP-3571? ☒ No ☐ Yes If Yes, _____

Training? ☒ No ☐ Yes If Yes, _____

Procurement activities? ☒ No ☐ Yes If Yes, _____

Building modifications? ☒ No ☐ Yes If Yes, _____

Other: _____

11. Include a list of reviewers and review comments and resolutions with this form or have reviewers sign below.

Printed Name	Discipline	Org. No.	Signature	Date
John Hansen	Operation	5240		11-27-02
SHAUN COMBA	IH	5240		11.27.02

12. Is document a TPR or EAR? ☐ No ☒ Yes If Yes, indicate procedure validation method used:

☐ Formal Walkdown ☒ Tabletop Analysis ☐ Limited Trial Use/Field Use ☐ Partial Validation

13. ☒ Change does not affect a permitted area, TSD facility, or VCO component. (RCRA evaluation NOT required. Proceed to Block 14.)

☐ Change does affect a permitted area, TSD facility, or VCO component.

Is RCRA permit/application modified: ☐ No ☐ Yes ☐ Unknown

If Yes or Unknown, attach completed Form 435.29 or reference form's location here: _____

Kevin Streeper (Evaluator Printed Name) Kevin Streeper (Evaluator Signature) 12-2-02 (Date)

Is VCO component affected? ☒ No ☐ Yes If Yes, contact the VCO Program Office for direction.

14. USQ Screening: (To be completed only after final document review.) List any associated change forms: _____

Is USQ screening required? (See Instructions)

☐ Not Required (Proceed to Block 15)

☒ Required (Submit document and DAR to qualified USQ screener and attach USQ screening form.) 02-USQ-TAN-1075

☐ USQ Evaluation Required? ☒ No ☐ Yes If Yes, attach evaluation.

15. Does this action qualify as a periodic review? ☒ No ☐ N/A

TRUPACT-157 UNLOADING AND LOADING RECOVERY OPERATIONS AT TAN	Identifier: TPR-6230 Revision: 0 Page: 1 of 52

Test Area North	Technical Procedure	For Additional Info: http://EDMS	Effective Date: 11/26/02

Manual: Detailed Operating Procedures for Test Area North Operations **USE TYPE 1** Change Number: 96334

TRUPACT S/N 157

PROCEDURE REVIEW REQUIREMENTS					
DISCIPLINE	REVISION	CHANGE	DISCIPLINE	REVISION	CHANGE
TAN/RWMC OPERATIONS	X	X	TAN INDUSTRIAL SAFETY	X	A/R
MAINTENANCE	X	A/R	TAN QUALITY	X	X
LANDLORD	N/A	N/A	TAN ENVIRONMENTAL	N/A	N/A
TAN/RWMC SYSTEM ENGINEER	X	X	TAN RADCON	X	A/R
TAN SAFETY ANALYSIS	X	A/R	TAN INDUSTRIAL HYGIENE	X	A/R
TRAINING	N/A	N/A	EMERGENCY PLANNER	N/A	N/A
SITE QUALITY ASSURANCE OFFICER (SQAO)	X	A/R	SAFEGUARDS (NMC)	N/A	N/A
			TAN CRITICALITY ENGINEER	N/A	N/A

CONTENTS

TABLES

1. INTRODUCTION

1.1 Purpose

The purpose of this document is to provide instructions for the loading and unloading operation of the Transuranic (TRU) Package Transporter (TRUPACT)-II and the removal of the Inner Containment Vessel (ICV) from the Outer Containment Vessel (OCV).

1.2 Scope and Applicability

This procedure applies to personnel loading and unloading TRUPACT-IIs and removing the ICV from the OCV. See Appendix A for Procedure Basis.

TRUPACT-II operations performed in this procedure are in compliance with requirements identified in Department of Energy (DOE)/WIPP 02-3183, CH Packaging Program Guidance; DOE/WIPP 02-3184, CH Packaging Operations Manual; and DOE/WIPP 02-3185, CH Packaging Maintenance Manual.

2. PRECAUTIONS AND LIMITATIONS

2.1 When handling TRU drums, every effort must be made to ensure continued container integrity.

2.2 If function-impairing damage is present, the damaged component will be replaced per a Standard (STD)-101, Integrated Work Control Process, work document and in accordance with DOE/WIPP 02-3183/02-3184 and 02-3185 before further use.

(WIPP)

2.3 The Adjustable Center of Gravity Lifting Fixture (ACGLF) is designed to handle the weight of an OCV lid, an ICV lid, an empty ICV assembly, or a payload. Payloads include 14-pack or dummy drums. The ACGLF is not designed to handle the weight of a TRUPACT-II container (loaded or empty), a loaded Outer Containment Assembly (OCA) or a loaded ICV. (A forklift is used to move TRUPACT-II containers between the transport vehicle and the platform.)

(WIPP)

2.4 The ACGLF with short legs may be set directly on the floor and disconnected from the crane. The ACGLF with long legs can be set on the floor but should have minimal vertical support from the crane to prevent tipping.

2.5 The TRUPACT-II container lids must not be interchanged, or the original Certification Leak Test is invalidated.

(WIPP)

2.6 Personnel performing this procedure must wear safety shoes.

(JSA)

2.7 The lifts in this procedure are critical lifts, pre-engineered production lifts, or ordinary lifts per DOE-STD-1090-2001, DOE Hoisting and Rigging Standard.

(JSA)

2.8 IF fossil-fueled vehicles are operating continuously, without the ventilation hoses attached, for more than approximately 10 minutes inside the building, THEN a carbon monoxide monitor must be obtained from Industrial Hygiene (IH) for use.

(JSA)

2.9 Movement of the ACGLF counterweights must not occur with the free load above approximately 6 in.

2.10 The interior of the TRUPACT-II is a non-permit confined space. Only hands/arms may break the plane of the TRUPACT-II interior. Contact IH for further direction if the face must break the plane.

(JSA)

2.11 No part of the body may be placed beneath a suspended load with the following exceptions: ACGLF adjustment/leg changes and guiding leg insertion.

(JSA)

2.12 When moving TRUPACT-II containers by forklift, a minimum of two spotters (one on each side of the TRUPACT-II/forklift) must be used.

(JSA)

2.13 During ACGLF operation, non-essential personnel must stay clear of the ACGLF.

(JSA)

2.14 Leather gloves are required when working with hot surfaces.

(JSA)

2.15 Nitrile, latex, or butyl rubber gloves and safety glasses with side shields must be worn when using nickel bearing lubricant or anti-seize lubricant.

(JSA)

2.16 Heat stress monitoring must be performed. Heat stress stay times vary depending upon environmental conditions, work activities, and personal protective equipment (PPE), and must be re-evaluated as conditions change per MCP-9240, "Managing Heat and Cold Stress at TAN."

(JSA)

2.17 Procedure steps or sections may be performed out-of-sequence as directed. The Technical Lead (TL)/Shift Supervisor (SS) marks the steps or sections to be performed out-of-sequence with a "go to _____" and records the justification for no adverse impact on the conduct of the procedure in Appendix B, Comment Sheet. After the last out-of-sequence step, the TL/SS marks "return to Step _____".

2.18 Procedure steps or sections may be re-performed as directed by the TL/SS. The TL/SS marks the step(s)/section(s) to be re-performed with "step(s)/section(s) _____ are to be re-performed and resigned", and enters the number of the step(s)/section(s) to be re-performed in the blank and records the justification for no adverse impact on the conduct of the procedure entered in Appendix B, Comment Sheet.

2.19 Procedure steps or sections may be marked N/A as follows:

2.19.1 Non-conditional steps or sections that contain technical safety requirements (TSR) or safety analysis report (SAR) commitments require a Document Action Request (DAR) to mark the step or section N/A.

2.19.2 Non-conditional steps or sections NOT involving TSR and SAR commitments may be marked N/A, initialed and dated by the TL/SS, and a written justification entered in Appendix B, Comment Sheet.

2.19.3 Conditional steps or sections must be marked N/A and initialed/dated by the person performing the procedure if the conditions stated by the procedure exist.

2.20 Procedure steps or sections may be signed or initialed by the TL/SS, Job Supervisor (JS), or PIC based on personal observation, direct report from the performer, or review of controlled records.

2.21 Any problems during procedure performance must be entered into Appendix B. Any documents (NCRs, WOs, DRs, etc.) issued to close, track, or resolve comments must be identified in Appendix B.

3. PREREQUISITES

3.1 Planning and Coordination

NOTE: *The following is a recommended crew (minimum). Manning may be adjusted as required by the TL/SS.*

☑ 3.1.1 TL/SS: As a minimum, ensure the following personnel are available:

A. Job Supervisor (JS) (continuously present at the job site)

B. TRUPACT-II Operators (SO)

C. Mechanic (M)

D. Radiological Control Technician (RCT)

E. Heavy Equipment Operator (HEO)

F. Equipment Operators (EO) - 2

G. Quality Inspector (QI)

H. Technical Lead (TL)/Shift Supervisor (SS)

I. TAN Operator (OP).

J. Carpenter (C)

K. Fixative Operator (FO)

☑ 3.1.2 JS: Conduct a pre-job briefing with personnel conducting this procedure in accordance with MCP-3003, "Performing Pre-Job Briefings and Post-Job Reviews," including TAN-JSA-6230.

(JSA)

3.1.3 TL/SS authorize work:

TL/SS 1/27/03 Date

3.1.4 A current Radiological Work Permit is required.

(JSA)

3.2 Performance Documents

INTEC-QA-0208, Quality Inspection Plan of TRUPACT-157 Unloading and Loading Recovery Operations at Test Area North (TAN)

PLN-1169, TRUPACT-II Shipping Container 157 Payload Examination Plan

INEEL Form 433.34, INEEL Lift Plan

INEEL Form 433.34A, INEEL Lift Plan Supplement

INEEL Form 441.63, Special Survey Techniques

3.3 Special Tools, Equipment, Parts, and Supplies

NOTE: *The following materials and equipment are recommended.*

Item	No.	Comments
Hot Shop crane: CRN-HS-902	1	Annual maintenance completed 3/8/02; due 3/8/03
Oman: OMAN-SP-901	1	Annual maintenance completed 2/30/02; due 2/3/03
Video recording camera and video tapes	A/R	As needed to monitor progress, perform inspections, and etc.
Wall mounts #1	1	Annual maintenance completed 7/14/02
Wall mounts #2	1	Annual maintenance completed 7/16/02
Applicable Lift Plans (INEEL Form 433.34)	A/R	Lift Plan numbers: TP 157-02 (ICV Lid Handling) TP 157-03 (Payload Handling)
Torque wrench (0–75 ft-lb range))	1	Required for OCV lock ring and access/thermal plug installation
Torque wrench (0–25 ft-lb range)	1	Required for OCV seal test/vent plug and vent port cover installation

Item	No.	Comments
Latex/butyl gloves	A/R	Required for applying anti-seize compound and coating O-rings
Razor knife	1	Required for cutting plastic sleeving.
Alpha and Beta-gamma CAMs	1	As required by ALARA review and RWP
RAMs	1	As required by ALARA review and RWP
Inner Containment Vessel	1	Part of TRUPACT-II
Outer Containment Vessel	1	Part of TRUPACT-II
TRUPACT transportation pallet	1	Required for staging the TRUPACT-II
ACGLF with control console	1	Required for lifting lids and payload
ICV/OCV lid storage stands	2	Required for storing lids
ICV cradle	1	Required to support the ICV
OCV/ICV lock ring mechanical advantage tool	1	Required for turning the OCV/ICV lock ring
OCV/ICV lock ring handles	A/R	Required for turning the OCV/ICV lock ring
Vacuum pump and associated gauge	1	Required for drawing vacuum
Smear extension tool	1	Required for surveying cask and internals
Long vent port tool	A/R	Required for OCV vent port
Short vent port tool	A/R	Required for ICV vent port
1" socket with hex head adapter	1	Required for vent/seal port plugs
GO-NO-GO gauge	1	Required to verify installation of TRUPACT-11 tiedowns
3/8" by ¼" adapter	1	Required for removal/installation of vent port plug
3/8" drive extension bars	A/R	Required for plug extraction
7/16" socket	1	Required for plug removal
5/8" socket	1	Required for plug removal
Nickel-based anti-seize compound	A/R	Required for lubricating lock-ring bolts
TRUPACT-II platform	A/R	Required for staging the TRUPACT-II
Vacuum grease	A/R	Required for lubricating O-rings
Dynamometer	1	Required to pull lids
Sample tool with HEPA filter	1	Required to maintain cleanliness of sampling equipment

3.4 Field Preparations

3.4.1 The required alpha and beta-gamma CAMs are operating as required by RadCon.

(JSA)

4. INSTRUCTIONS

NOTE 1: *Steps involving rigging the ACGLF to the crane, ICV/OCV lids, or miscellaneous material; installing or changing ACGLF legs; storing the ACGLF; or servicing the forklift may be performed out of sequence, as appropriate.*

NOTE 2: *Procedure steps, sections, and steps within sections may be performed concurrently as directed by the SS/TL.*

NOTE 3: *Procedure steps or sections will be signed off or initialed by the Performer, TL/SS, or JS based on personal observation, direct report from the performer, or review of controlled records.*

NOTE 4: *The Payload Examination Plan (PLN-1169) may be worked at any time during the performance of this procedure at the direction of the TL/SS/JS.*

NOTE 5: *All radiological surveys will be documented in accordance with MCP-139, "Radiological Surveys."*

NOTE 6: *Quality Inspection Plan, INTEC-QA-0208, must be performed in conjunction with this procedure.*

4.1 General

1-27-03

4.1.1 JS: Ensure applicable prerequisites have been met.

4.1.2 **GO TO** the appropriate procedure section from the following table based on the desired task to be performed,
THEN **RETURN TO** this step.

Task	Section to Perform
TRUPACT-II Trailer Preparations	Section 4.2
Releasing Tiedowns	Section 4.3
Transfer the TRUPACT-II	Section 4.4
Unloading a Payload Assembly	Section 4.5
ICV Lid Installation	Section 4.6
ICV Removal from OCV	Section 4.7
OCV Lid Installation	Section 4.8

Task	Section to Perform
Transfer the TRUPACT-II to Transport Trailer	Section 4.9
Releasing the TRUPACT-II Trailer	Section 4.10
Post-Performance Activities	Section 4.11 and EXIT this procedure.

4.2 TRUPACT-II Trailer Preparations

NOTE: *The TRUPACT-II may be cleaned and/or dried before transport to a designated area as required. The TRUPACT-II may be cleaned with dampened cloths or a soft brush and water. Used cleaning materials should be managed according to site waste management procedures.*

(WIPP, JSA)

1-27-03

4.2.1 JS: **RECORD** TRUPACT-II serial number.

TRUPACT-II serial number 157

(WIPP)

CAUTION

A visual check should be made to ensure that the air bags on the trailer have fully inflated before the trailer is moved. Failure to do so may cause the tires to rub.

(WIPP)

1-27-03

4.2.2 EO: IF positioning a trailer is required,
THEN perform the following as applicable.

✓ 4.2.2.1 EO: Position the transport trailer in the designated loading area.

4.2.2.2 EO: Lower the trailer jacks (landing gear), ensuring the trailer is level.

4.2.2.3 EO: Install wheel chocks.

4.2.2.4 EO: Disconnect tractor from trailer.

4.2.2.5 EO: Install trailer stands on free-standing trailers.

(WIPP)

4.3 Releasing Tiedowns

CAUTION

To prevent damage to the TRUPACT-II exterior, the tiedown assemblies must be completely lowered to the trailer brackets.

(WIPP)

NOTE: *Steps 4.3.1 and 4.3.2 may be performed concurrently or out of sequence as directed.*

LC 1-27-03

4.3.1 M: Release the tiedown assemblies as follows.

(WIPP)

4.3.~~1~~.1 Wire brush the threads exposed below the tiedown adjusting nuts and apply a thin film of nickel-based anti-seize to the exposed threads.

4.3.1.~~2~~ Loosen tiedown adjusting nuts, lift tiedown assemblies from TRUPACT-II lugs, rotate away from lugs, and ensure lowering completely to the trailer brackets.

LC 1-27-03

4.3.2 M: Rotate the four forklift pocket covers to the UP position, or remove the covers and store in a designated area.

(WIPP)

4.4 Transfer the TRUPACT-II

CAUTION 1

When using a forklift in conjunction with the TRUPACT-II, the fork tines must fully engage the pockets. This, however, does not imply contact between the fork uprights and the TRUPACT-II exterior.

CAUTION 2

Tip-back may damage the exterior surface when utilizing a forklift to relocate a TRUPACT-II.

(WIPP)

KK 1-27-03

4.4.1 EO: Remove the TRUPACT-II from the trailer and transfer the TRUPACT-II to the designated area as applicable.

WARNING

At least two spotters must be present when moving TRUPACT-IIs with the forklift.

(JSA)

KK 1-27-03

4.4.2 EO/OP: IF transferring a TRUPACT-II to the platform, THEN remove the platform section in front of the TRUPACT-II opening if required.

1-27-03

4.4.3 EO/OP: Lay clean plastic on the floor where the TRUPACT-II will rest as directed by the JS if not already done.

1-27-03

4.4.4 EO/OP: Wrap the TRUPACT-II with plastic as directed by the JS and RCT.

1-27-03

4.4.5 HEO: Place the TRUPACT-II in the platform as directed.

1-27-03

4.4.6 EO/OP: Replace the platform section as directed.

1-27-03

4.4.7 EO/OP: Protect the TRUPACT-II from contamination by wrapping it with poly sleeving/sheets as required.

4.5 Unloading a Payload Assembly

NOTE: *Rotation of the ACGLF weights may be used to assist in the removal of the OCV lid (breaking the seal); however, care must be taken to ensure the weights are positioned in the 180° and 000° positions respectively prior to lifting the lid.*

(WIPP)

1/27/03 4.5.1 TL: Designate a PIC prior to hoisting activities for CRITICAL LIFTS in Section 4.5.

PIC: K.L. KINGSTON

(JSA)

1-27-03 4.5.2 M/OP: Remove any tamper indicating devices from the OCV lid if required.

1-27-03 4.5.2.1 QI: IF TID has been tampered with, THEN stop work and notify TL/SS. WIPP 0067

1-27-03 4.5.3 M: Prepare the OCV lid for removal by removing the following components.

(WIPP)

~~4.5.3.1~~ OCV lid lift pocket covers (remain attached to OCV lid).

~~4.5.3.2~~ OCV test port access plug and thermal plug.

~~4.5.3.3~~ OCV vent port access plug and thermal plug.

~~4.5.3.4~~ OCV vent port cover.

~~4.5.3.5~~ OCV seal test port plug.

1-27-03 4.5.4 M: Place removed components in labeled storage container.

4.5.4.1 QI: **VERIFY** that components have been placed in labeled storage container.

QI signature: K.L. Kingston Date: 1-27-03

1-27-03 4.5.5 EO/OP: Cover the remaining exposed areas of the OCV lid with plastic as directed by JS/RCT.

CAUTION

The two ACGLF counterweights must be located at the 180° and 000° positions respectively, prior to lifting an ACGLF or lid (once the lid is free).

(WIPP)

MC 1-27-03

4.5.6 OP/EO: Rig or ensure the rigging for the ACGLF to the overhead crane per Lift Plan TP 157-01 (INEEL Form 433.34).

(JSA)

MC 1-27-03

4.5.7 HEO/OP: With the crane and ACGLF, lower the ACGLF legs into the lift pockets on the OCV lid.

(WIPP)

MC 1-27-03

4.5.8 EO: Ensure the ACGLF legs are locked.

(WIPP)

CAUTION

Three operators should be able to rotate the lock ring with reasonable effort. Do not attempt to rotate the OCV or ICV lock ring assembly with mechanical force other than with the TRUPACT-II lock ring tool (an extension to provide additional leverage and control). Care should be used to prevent the lock ring from slamming into the stops.

(WIPP, JSA)

MC 1-27-03

4.5.9 EO/M/SO: Rotate the lock ring to the UNLOCK position by performing the following:

(WIPP)

4.5.9.1 Install OCV vent port tool (2077-091-A2).

4.5.9.2 Connect sample tool to the vent port tool/sample tool.

4.5.9.3 Retrieve OCV vent port plug into vent port tool.

4.5.9.4 Connect hose to vent port tool/sample tool.

4.5.9.5 Start vacuum pump.

NOTE: *The TRUPACT-II vacuum should be periodically checked by isolating the pump from the TRUPACT-II.*

4.5.9.6 Place valve VAC-V3P-1801 in the VACUUM position.

4.5.9.7 Open valve VAC-SHV-3524B and evacuate to 3-in. Hg minimum.

4.5.9.8 Remove OCV lock ring bolts.

4.5.9.9 Manually rotate the OCV lock ring to the UNLOCKED position.

4.5.9.10 Close valve VAC-SHV-3524B.

4.5.9.11 Place valve VAC-V3P-1801 in the OFF position.

4.5.9.12 Stop vacuum pump.

4.5.9.13 Disconnect hose from sample tool.

4.5.9.14 Remove vent port tool/sample tool.

1/22/03

4.5.10 RCT: Perform survey of vent port tool/sample tool.

(JSA)

CAUTION 1

When lifting the OCV lid by the lift pockets, the load exerted on the lift pockets must not exceed 7,500 lb (10,000 lb minus ACGLF at 2,500 lb). An indication of 10,000 lb or greater may indicate OCV lid binding.

(WIPP)

CAUTION 2

The two ACGLF counterweights must be located at the 180° and 000° positions respectively, prior to lifting an ACGLF or lid.

(WIPP)

1-27-03

4.5.11 HEO/OP: Using the crane, remove OCV lid to a height appropriate for the RCT to survey between the OCV lid and the ICV body.

(WIPP)

NA 1-27-03

4.5.11.1 EO/OP: IF the lid is stuck,
THEN manually apply pressure to the sides of the lid,
OR adjust the ACGLF counterweights to help remove the lid.

(WIPP)

NA 1-27-03

4.5.11.2 HEO: IF the lid does separate from the TRUPACT-II,
THEN adjust the ACGLF counterweights to 180° and 000° respectively, and remove the OCV lid.

WARNING

No part of the body may be placed beneath the suspended lid. A survey extension tool must be used to obtain contamination smears.

(JSA)

NOTE: *Step 4.5.12.1 may be performed out of sequence or concurrently, as directed.*

1-27-03

4.5.12 RCT: Perform contamination surveys of the OCV lid interior and ICV lid exterior.

(WIPP, JSA)

4.5.~~12.1~~ **RECORD** survey results on survey map.

1-27-03

4.5.13 IH: Take volatile organic compound (VOC) air samples of the OCV lid interior and ICV lid exterior.

(JSA)

CAUTION

To prevent damage to the lock ring, the OCV lid must be placed on the lid stand and not on a flat surface.

1-27-03

4.5.14 HEO/OP: Place the OCV lid on its designated storage stand.

(WIPP)

NOTE: *Step 4.5.15.5.19 may be performed in conjunction with rigging for the ACGLF.*

1-27-03

4.5.15 ICV Lid Removal

CAUTION

The two ACGLF counterweights must be located at the 180° and 000° positions respectively, prior to lifting an ACGLF or lid.

(WIPP)

1-27-03

4.5.15.1 M: Prepare the ICV lid for removal by removing the following components and placing them in the designated temporary storage box:

(WIPP)

A. ICV vent port cover

B. ICV outer vent port plug.

1-27-03

4.5.15.2 M: Place removed components in labeled storage container.

4.5.15.2.1 QI: **VERIFY** that components have been placed in labeled storage container.

QI signature: _____ Date: 1-27-03

4.5.15.3 EO/OP: Rig or ensure the rigging for the ACGLF, to the overhead crane per Lift Plan TP 157-02 (INEEL Form 433.34).

4.5.15.4 HEO/OP: With the crane and ACGLF, lower the ACGLF legs into the lifting pockets on the ICV lid.

(WIPP)

CAUTION

Three operators should be able to rotate the locking ring with reasonable effort. Do not attempt to rotate the OCV or ICV lock ring assembly with mechanical force other than the TRUPACT-II lock ring tool (an extension to provide additional leverage and control). Care should be used to prevent the lock ring from slamming into the stops.

(WIPP, JSA)

NOTE: *The ICV is designed for safe operation with a full internal vacuum. However, due to the possible presence of volatile organic compounds in the payload, general operations of the loaded ICV should be accomplished using less than 15 in.-Hg vacuum.*

(WIPP)

4.5.15.5 Unlock the ICV lock ring by performing the following.

(WIPP)

4.5.15.5.1 M: Remove the ICV lock ring bolts (3).

4.5.15.5.2 M: Remove the ICV seal test port plug.

4.5.15.5.3 SO: Install ICV vent port tool (2077-091-A1).

4.5.15.5.4 SO: Attach sample tool to vent port tool.

4.5.15.5.5 SO: Connect the hose to vent port sample tool.

4.5.15.5.6 SO: Start vacuum pump.

4.5.15.5.7 SO: Place valve VAC-V3P-1801 in the VACUUM position.

NOTE: *The TRUPACT-II vacuum should be periodically checked by isolating the pump from the TRUPACT-II.*

4.5.15.5.8 SO: Open valve VAC-SHV-3524B and evacuate to 3-in. Hg minimum.

4.5.15.5.9 SO: Retrieve the ICV vent port plug into the ICV vent port sample tool.

4.5.15.5.10 EO: Manually rotate the ICV lock ring to the UNLOCKED position.

4.5.15.5.11 SO: Close valve VAC-SHV-3524B.

4.5.15.5.12 SO: Place valve VAC-V3P-1801 in the OFF position.

4.5.15.5.13 SO: Stop vacuum pump.

4.5.15.5.14 SO: With RCT concurrence, disconnect the hose from sample tool.

4.5.15.5.15 SO: With RCT concurrence, remove sample tool.

4.5.15.5.16 SO: With RCT concurrence, remove vent port tool and plug.

4.5.15.5.17 RCT/SO: Cover the vent hole with a piece of tape as directed by RadCon.

4.5.15.5.18 OP: Remove the ACGLF from the ICV lid and stage as directed by the JS to allow installation of the containment sleeve.

4.5.15.5.19 C/EO/OP: Attach the containment to the TRUPACT-II and retract it down and around the TRUPACT-II such that it can be pulled up around the payload at a later time.

4.5.15.5.20 OP/RCT: Remove the tape from the vent hole.

1-27-03

4.5.15.6 EO/OP: Rig or ensure the rigging for the ACGLF, to the overhead crane per Lift Plan TP 157-02 (INEEL Form 433.34)

(JSA)

4.5.15.6.1 PIC: Ensure that INEEL Form, 433.34A. "INEEL Lift Plan Supplement," has been completed and verified for this CRITICAL LIFT.

PIC signature: _____ Date: 1-27-03

(JSA)

1-27-03

4.5.15.7 EO: Ensure the ACGLF legs are locked.

(WIPP)

CAUTION 1

When lifting the ICV lid by the lift pockets, the load exerted on the ICV lifting pockets must not exceed 5,000 lb (7,500 lb minus ACGLF 2,500 lb). An indication of 7,500 lb or greater may indicate ICV lid binding.

(WIPP)

CAUTION 2

The two ACGLF counterweights must be located at 180° and 000° positions respectively, prior to lifting an ACGLF or lid.

(WIPP)

1-27-03

4.5.15.8 HEO/OP: Using the crane, remove ICV lid to a height appropriate for RCT surveys.

(WIPP)

NA 1-27-03

4.5.15.8.1 EO/OP: IF the lid is stuck, THEN manually apply pressure to the sides of the lid or adjust ACGLF counterweights to help remove the lid.

NAGC 1-27-03

4.5.15.8.2 HEO/OP: IF the lid does separate from the TRUPACT-II,
THEN adjust the ACGLF counterweight to 180° and 000° positions respectively.

WARNING

No part of the body may be placed beneath the suspended lid. A survey extension tool must be used to obtain contamination smears.

(JSA)

NOTE: *Step 4.5.15.9.1 may be performed out of sequence or concurrently, as directed.*

MC 1-27-03

4.5.15.9 RCT: Perform contamination surveys and take air samples of the ICV lid interior and top of payload as directed by RadCon.

(WIPP, JSA)

4.5.15.9.1 **RECORD** survey results on survey map.

MC 1-27-03

4.5.15.10 IH: Take VOC air samples of the ICV lid interior and top of payload.

(JSA)

NAM 1-27-03

4.5.15.11 OP: IF directed by RadCon,
THEN apply contamination fixative.

CAUTION

To prevent damage to the lock ring, the ICV lid must be placed on the lid stand and not on a flat surface.

MC 1-27-03

4.5.15.12 C/OP: Separate the sleeving under the direction of the RCT.

NAM 1-27-03

4.5.15.13 FO: Apply fixative as necessary to the ICV lid as directed by the JS/RCT.

LL 1-27-03 1-27-03 STOPPED HERE

LL 1-28-03 STARTED HERE 1-28-03

4.5.15.14 HEO/OP: Place ICV lid on its storage stand as directed.

(WIPP)

4.5.15.15 RCT/OP: Perform required inspections/surveys of the ICV cavity and payload per the Payload Examination Plan.

WARNING

Only hands/arms may break the plane of the non-permit confined space. Contact IH for further direction if the face must break the plane.

(JSA)

NOTE: *Appendix D may be performed concurrently with other sections as directed by the JS.*

LL 1-28-03 4.5.15.16 M/SO: Perform inspection, preparation, and cleaning of OCV assembly per Appendix D.

(WIPP)

LL 1-28-03 4.5.16 EO: Attach the appropriate legs to the ACGLF as required.

(WIPP)

CAUTION

The two ACGLF counterweights must be located at 180° and 000° positions respectively, prior to lifting an ACGLF or lid.

(WIPP)

LL 1-28-03 4.5.17 OP/SO: Cut holes in the poly sleeving as necessary to allow the ACGLF to engage the payload, as directed by the RCT.

KL 1-28-03 4.5.18 HEO/OP: Using the crane and the ACGLF per Lift Plan TP 157-03 (INEEL Form 433.34), engage the payload.

(WIPP, JSA)

4.5.18.1 PIC: Ensure that INEEL Form 433.34A, "INEEL Lift Plan Supplement," has been completed and verified for this CRITICAL LIFT.

PIC signature: _____ Date: 1-28-03 1-28-03

(JSA)

KL 1-28-03 4.5.19 EO: Lock the ACGLF legs into the 14-pack payload assembly.

(WIPP)

KL 1-28-03 4.5.20 HEO/OP: Position the ACGLF counterweights to the predetermined positions as marked on the top of the payload.

(WIPP)

NOTE: *Steps 4.5.21 and 4.5.22 are performed concurrently to remove the payload.*

KL 1-28-03 4.5.21 HEO: Monitor the ACGLF indicated balance and adjust counterweights as needed.

(WIPP)

KL 1-28-03 4.5.22 HEO/OP: Slowly raise the 14-pack payload assembly.

(WIPP)

KL 1-28-03 4.5.23 RCT/OP: Perform additional inspections of the payload per the Payload Examination Plan as required.

KL 1-28-03 4.5.24 C/OP: Separate the sleeving under the direction of the RCT.

KL 1-28-03 4.5.25 EO/OP: Place the 14-pack payload assembly in a designated area.

KL 1-28-03 4.5.26 EO: Ensure ACGLF legs are unlocked.

KL 1-28-03 4.5.27 EO/OP: Ensure the two ACGLF counterweights are located at the 180° and 000° positions respectively, prior to lifting the ACGLF.

(WIPP)

KL 1-28-03 4.5.28 EO: Remove ACGLF from the payload per RadCon direction.

KL 1-28-03 4.5.29 RCT: Perform survey of ACGLF legs as required.

(JSA)

NOTE: *Step 4.5.30.1 may be performed out of sequence or concurrently, as directed.*

KL 1-28-03 4.5.30 RCT: Perform contamination surveys of ICV interior surfaces.

(JSA)

4.5.30.1 **RECORD** survey results on survey map.

JSA KL 1-28-03 4.5.31 FO: Apply fixative as necessary to the ICV cavity as directed by the JS/RCT.

KL 1-28-03 4.5.32 OP: Inspect TRUPACT-II interior (ICV) per Payload Examination Plan as required.

4.6 ICV Lid Installation

KL 1-28-03 4.6.1 TL: Designate a PIC prior to hoisting activities for CRITICAL LIFTS in Section 4.6.

PIC: K. L. KYNASTON

(JSA)

CAUTION

The two ACGLF counterweights must be located at the 180° and 000° positions respectively, prior to lifting an ACGLF or lid.

(WIPP)

1-28-03 4.6.2 IF plastic sleeving material was used,
THEN cut it away (partially or fully) at the direction of RadCon personnel as required.

1-28-03 4.6.3 HEO/OP: With the crane and ACGLF per Lift Plan TP 157-02 (INEEL Form 433.34), lower the ACGLF legs into the lifting pockets of the ICV lid.

(WIPP, JSA)

4.6.3.1 PIC: Ensure that INEEL Form 433.34A, "INEEL Lift Plan Supplement," has been completed and verified for this CRITICAL LIFT.

PIC signature: _____ Date: 1-28-03

(JSA)

1-28-03 4.6.4 EO: Ensure the ACGLF legs are locked.

(WIPP)

1-28-03 4.6.5 SO: Install vent port tool with sample attachment.

1-28-03 4.6.6 OP: As directed by RadCon, install additional containment for ICV lid installation and initial containment removal from ICV lid.

1-28-03 4.6.7 HEO/OP: Using the crane and ACGLF, align the UNLOCK arrows and install the ICV lid onto the ICV body.

(WIPP)

1-28-03 4.6.8 EO: Ensure the ACGLF legs are unlocked.

CAUTION

Three operators should be able to rotate the locking ring with reasonable effort. Do not attempt to rotate the OCV or ICV lock ring assembly with mechanical force other than the TRUPACT-II lock ring tool (an extension to provide additional leverage and control). Care should be used to prevent the lock ring from slamming into the stops.

(WIPP, JSA)

1-28-03 4.6.9 SO: Connect the hose to the ICV vent port tool and evacuate the ICV cavity enough to allow the ICV lock ring to rotate freely as follows:

4.6.9.1 Connect the hose to vent port tool.

4.6.9.2 Start the vacuum pump.

4.6.9.3 Place valve VAC-V3P-1801 in the VACUUM position.

NOTE: *The TRUPACT-II vacuum should be periodically checked by isolating the pump from the TRUPACT-II.*

4.6.9.4 Open valve VAC-SHV-3524B and evacuate to 3-in. Hg minimum.

1-28-03 4.6.10 SO: Manually rotate the ICV lock ring to the locked position.

1-28-03 4.6.11 SO: Close valve VAC-SHV-3524B.

1-28-03 4.6.12 SO: Place valve VAC-V3P-1801 in the OFF position.

1-28-03 4.6.13 SO: Turn off the vacuum system pump and disconnect the hose.

1-28-03 4.6.14 SO: Remove the ICV vent port tool and sample tool.

1-28-03 4.6.15 M: Install and torque the inner vent port plug to 55 to 65 in.-lb or 4.6 to 5.5 ft-lb.

1-28-03 4.6.16 M: Install and torque the outer vent port plug to 55 to 65 in.-lb or 4.6 to 5.5 ft-lb.

1-28-03 4.6.17 M: Install the three ICV lock ring bolts and torque to 336 to 384 in.-lb or 28 to 32 ft-lb each.

(WIPP)

WL 1-28-03 4.6.18 M: Install and torque the seal test port plug as follows.

4.6.18.1 ICV – seal test port plug to 55 to 65 in.-lb or 4.6 to 5.5 ft-lb.

WL 1-28-03 4.6.19 M: Install and torque the vent port cover as follows.

4.6.19.1 ICV – vent port cover to 55 to 65 in.-lb or 4.6 to 5.5 ft-lb.

4.7 ICV Removal from the OCV

WL 1-28-03 4.7.1 JS: Ensure the ICV lid has been installed per section 4.6.

CAUTION

The two ACGLF counterweights must be located at the 180° and 000° positions respectively, prior to lifting an ACGLF or lid.

(WIPP)

NA WL 1-28-03 4.7.2 HEO/OP: With the crane and ACGLF per Lift Plan TP 157-04 (INEEL Form 433.34), lower the ACGLF legs into the lifting pockets of the ICV lid if required.

(JSA)

NA WL 1-28-03 4.7.3 RCT/OP: Remove all secondary containment plastic from the ICV lid as necessary.

NA WL 1-28-03 4.7.4 RCT/OP: Survey and decontaminate the ICV lid as necessary.

KL 1-28-03 4.7.5 EO: Ensure the ACGLF legs are locked.

WL 1-28-03 4.7.6 EO/HEO/OP: If the annulus foam is present, remove it and place it in a poly bag as directed by the JS.

NA WL 1-28-03 4.7.7 EO/HEO/OP: Move the annulus protector as necessary as directed by the JS/RCT.

WL 1-28-03 4.7.8 HEO/OP: Remove the ICV from the OCV and place in a location designated by the JS/SS.

WL 1-28-03 4.7.9 EO: Ensure the ACGLF legs are unlocked.

WL 1-28-03 4.7.10 HEO/OP: Move the ACGLF to an area designated by the JS.

4.7.11 OP/RCT/SO: Perform surveys per the Payload Examination Plan as required.

(JSA)

WARNING

Only hands/arms may break the plane of the non-permit confined space. Contact IH for further direction if the face must break the plane.

(JSA)

4.7.12 RCT/OP: Survey OCV internals and decontaminate as necessary.

(JSA)

4.7.13 IF this procedure is being used for the "Training TRUPACT-II," THEN perform the following:

~~4.7.13.1~~ OP: Ensure the ICV lid has been installed per section 4.6.

~~4.7.13.2~~ RCT: Survey ICV exterior.

(JSA)

CAUTION

The two ACGLF counterweights must be located at the 180° and 000° positions respectively, prior to lifting an ACGLF or lid.

(WIPP)

~~4.7.13.3~~ HEO/OP: Using the crane and ACGLF per Lift Plan TP 157-04 (INEEL Form 433.34), lower the ACGLF legs into the lifting pockets of the ICV lid as required.

(JSA)

~~4.7.13.4~~ EO: Ensure the ACGLF legs are locked.

4.7.13.5 HEO/OP: If necessary, raise the Training ICV 2 to 6 inches off of the floor and balance.

4.7.13.6 EO/OP: Center the Training ICV over the Training OCV.

4.7.13.7 HEO/OP: Lower the Training ICV into the Training OCV.

4.7.13.8 HEO/OP: Align the vent ports within 1 ft of each other.

4.7.13.9 SO/EO/OP: Install the annulus foam if required.

4.7.13.10 EO: Ensure the ACGLF legs are unlocked.

4.7.13.11 HEO/OP: Move the ACGLF to an area designated by the JS.

4.8 OCV Lid Installation

4.8.1 JS: **VERIFY** inspection completion of OCV lid, body, and applicable components (see Appendix D).

JS signature: _____ Date: 1-28-03

(WIPP)

4.8.2 SO: Match the OCV lid and body serial numbers. **RECORD** the OCV lid/body serial number.

OCV Lid/Body serial number: 157

(WIPP)

QI HOLD

4.8.3 QI: **RECORD** the serial number and calibration due date of the torque wrench used in this section on the test port plug.

Torque wrench serial number: 703615

Calibration due date: 5-1-03

QI signature: RC Justice Date 1-28-03

1-28-03 4.8.4 M: Install the OCV seal test port plug and torque to 55 to 65 in.-lb or 4.6 to 5.5 ft-lb.

4.8.4.1 QI: **VERIFY** OCV seal test port plug has been installed and torqued to specified values (55 to 65 in.-lb or 4.6 to 5.5 ft-lb).

QI signature: _____ Date: 1-28-03

1-28-03 4.8.5 OP/EO: Rig or ensure rigging for the ACGLF to the overhead crane per Lift Plan TP 157-01 (INEEL Form 433.34).

(JSA)

CAUTION

The two ACGLF counterweights must be located at 180° and 000° positions respectively, prior to lifting an ACGLF or lid.

(WIPP)

1-28-03 4.8.6 HEO/OP: Using the crane and the ACGLF, lower the ACGLF legs into the lifting pockets on the OCV lid.

(WIPP)

1-28-03 4.8.7 EO: Ensure the ACGLF legs are locked.

(WIPP)

1-28-03 4.8.8 HEO/OP: Install the OCV lid onto the OCV body.

(WIPP)

1-28-03 4.8.9 EO: Ensure ACGLF legs are unlocked.

CAUTION

Three operators should be able to rotate the lock ring with reasonable effort. Do not attempt to rotate the OCV or ICV lock ring assembly with mechanical force other than with the TRUPACT-II lock ring tool (an extension to provide additional leverage and control). Care should be used to prevent the lock ring from slamming into the stops.

(WIPP, JSA)

4.8.10 Rotate the lock ring to the LOCK position by performing the following.

(WIPP)

MC 1-28-03 4.8.10.1 SO: Install the OCV vent port tool.

MC 1-28-03 4.8.10.2 SO: Connect the hose to the OCV vent port tool and evacuate the OCV cavity to allow the OCV lock ring to rotate freely as follows.

4.8.10.2.1 Start the vacuum pump.

4.8.10.2.2 Place valve VAC-V3P-1801 in the VACUUM position.

NOTE: *The TRUPACT-II vacuum should be periodically checked by isolating the pump from the TRUPACT-II.*

4.8.10.2.3 Open valve VAC-SHV-3524B and evacuate to 3-in. Hg minimum.

MC 1-28-03 4.8.10.3 SO: Manually rotate the OCV lock ring clockwise to the locked position.

MC 1-28-03 4.8.10.4 SO: Close valve VAC-SHV-3524B.

MC 1-28-03 4.8.10.5 SO: Place valve VAC-V3P-1801 in the OFF position.

MC 1-28-03 4.8.10.6 SO: Turn off the vacuum pump system and disconnect the hose.

MC 1-28-03 4.8.10.7 SO: Remove the vent port tool.

MC 1-28-03 4.8.10.8 HEO/OP: Remove the ACGLF as directed.

4.8.11 QI: **RECORD** the serial number and calibration due date of the torque wrenches used in this section on port plugs and lock ring bolts.

Torque wrench serial number: 704213

Calibration due date: 2-27-03

Torque wrench serial number: 703615

Calibration due date: 5-1-03

QI signature: RC Justice Date 1-28-03

4.8.12 M: Install and torque the appropriate vent port plug and seal test port plugs as follows:

RC 1-28-03 4.8.12.1 OCV – vent port plug to 55 to 65 in.-lb or 4.6 to 5.5 ft-lb.

RC 1-28-03 4.8.12.2 OCV – vent port cover to 55 to 65 in.-lb or 4.6 to 5.5 ft-lb.

RC 1-28-03 4.8.12.3 OCV – seal test port access plug and thermal plug to 420 to 540 in.-lb or 35 to 45 ft-lb.

RC 1-28-03 4.8.12.4 OCV – vent port access plug and thermal plug to 420 to 540 in.-lb or 35 to 45 ft-lb.

QI HOLD

4.8.13 QI: **VERIFY** torque of OCV vent port plug and cover and sign below.

QI signature: RC Justice Date 1-28-03

QI HOLD

4.8.14 QI: **VERIFY** torque of vent port/access plug and thermal plug, and seal/test port access plug and thermal plug, and sign below.

QI signature: RC Justice Date 1-28-03

4.8.15 M: Install the six OCV lock ring bolts and torque to 336 to 384 in.-lb or 28 to 32 ft-lb each.

(WIPP)

4.8.15.1 QI: **VERIFY** OCV lock-ring bolts have been installed and torqued to specified values (336 to 384 in.-lb or 28 to 32 ft-lb).

QI signature: _____ Date: 1-28-03

4.8.16 EO/M/SO: Install the OCV lid-lift pocket covers.

4.9 Transfer TRUPACT-II to the Transport Trailer

4.9.1 EO/HEO: Perform the following, if applicable:

4.9.1.1 Position the transport trailer in a designated parking area.

4.9.1.2 Lower the trailer jacks (landing gear), ensuring the trailer is level.

4.9.1.3 Install wheel chocks.

4.9.1.4 Disconnect tractor from trailer.

4.9.1.5 Install trailer stands on free-standing trailers.

WARNING

At least two spotters must be present when moving TRUPACT-IIs with the forklift.

(JSA)

CAUTION 1

Tip-back may damage the exterior surface when utilizing a forklift to relocate a TRUPACT-II.

(WIPP)

CAUTION 2

It is necessary to align the tiedown lugs with the tiedown U-bolts prior to setting the TRUPACT-II into place. Caution must be used to lower the TRUPACT-II slowly onto the trailer.

NOTE: *Platforms may be disassembled and reassembled as necessary to facilitate TRUPACT-II movement.*

(JSA)

LAL 1-29-03 4.9.2 OP: Remove plastic from the OCV as directed by RadCon.

LAL 1-29-03 4.9.3 OP: IF necessary, move the TRUPACT-II to a designated area in order to remove the remaining plastic as directed by the JS with RCT concurrence.

NOTE: *Step 4.9.4.1 may be performed at any time after the survey has been completed.*

LAL 1-29-03 4.9.4 RCT: Perform surveys of OCV.

(JSA)

4.9.4.1 **RECORD** survey results on survey map.

JLC 1-24-03 4.9.5 EO: Load the TRUPACT-II designated for position number 1 (a) onto the trailer with the vent port on the driver's side of the trailer.

(WIPP)

NA JLC 1-29-03 4.9.6 EO: If applicable, load the TRUPACT-II designated for position number 2 (b) onto the trailer with the vent port on the driver's side of the trailer.

(WIPP)

JLC 1-29-03 4.9.7 M: Install the four (4) tie-down assemblies for each TRUPACT-II loaded on the trailer. Secure the tie-downs on all TRUPACT-II containers as follows:

(WIPP)

4.9.7.1 Using a wire brush, remove any foreign matter from the following tiedown components, as required:

A. U-bolt threads

B. nuts.

4.9.7.2 Lubricate the threaded areas of U-bolts and nuts using anti-seize or general purpose lubricant, as required.

(JSA)

4.9.7.3 Lift U-bolts (4), up and position toward and over the packaging tiedown lugs.

4.9.7.4 Tighten the (2) adjusting nuts for each tiedown U-bolt.

JLC 1-29-03 4.9.8 M: Using the GO-NO-GO gauge, check the gap between the disk spring retainer block and the compression plate assembly on each tie-down.

NOTE: *Steps 4.9.8.1 through 4.9.11 may be worked concurrently and/or out of sequence as directed by the JS.*

4.9.8.1 M: IF the gap on any tiedown fails the GO-NO-GO check, THEN adjust the affected tiedown(s) as follows:

NOTE: *Failure of the block to move upward with each adjustment indicates galling of the threads and imminent failure of the bolt.*

A. IF the gap is too large,
THEN turn adjusting nuts upward (clockwise) an equal amount while ensuring that the block moves upward with each adjustment of the nut.

B. IF the gap is too small,
THEN turn adjusting nuts down (counterclockwise) an equal amount.

4.9.8.2 QI: Using the GO-NO-GO gauge, **VERIFY** the gap between the disk spring container block and compression plate assembly on each tiedown.

QI signature: _____ Date 1-29-03

4.9.9 M: Ensure a lock pin has been inserted through each tie-down handle.

4.9.10 M: Rotate or reinstall the TRUPACT-II forklift pocket access covers.

4.9.11 QI: Inspect the TRUPACT-II forklift pocket access covers for damage.

4.10 Releasing the TRUPACT-II Trailer

4.10.1 EO: Connect the TRUPACT-II tractor and the TRUPACT-II trailer as necessary:

4.10.1.1 EO: Move trailer stands from freestanding trailers if necessary.

4.10.1.2 EO: Connect the TRUPACT-II tractor and the TRUPACT-II trailer, if applicable.

4.10.1.3 EO: Raise the trailer jacks (landing gear), if applicable.

4.10.1.4 EO: Remove the wheel chocks.

CAUTION

A visual check should be made to ensure the airbags on the trailer are fully inflated before the trailer is moved. Failure to do so may cause the tires to rub on the bottom of the rear TRUPACT-II.

(WIPP)

1-29-03 4.10.2 EQ: Remove the TRUPACT-II tractor/trailer to the area designated by the JS.

4.11 Post Performance Activities

2-3-03 4.11.1 JS: Conduct a post-job review in accordance with MCP-3003.

2/3/03 4.11.2 TL/SS: Ensure the TPR is completed and acceptable for closure.

2-3-03 JLR 2/3/03 4.11.3 QE: Complete Quality Inspection Plan documentation review.

2-3-03 JLR 2/3/03 4.11.4 QE: Ensure all TPR steps are completed, signed off, and dated. (Appendix B comments should be properly dispositioned and completed.)

2-3-03 JLR 2/3/03 4.11.5 QE: Ensure that any Non-Conformance Reports items listed in Appendix B have been reported on a Non Conformance Report (NCR).

2-3-03 JLR 2/3/03 4.11.6 QE: Ensure that the total records package is complete (see Section 5) and has been assembled and transmitted to the Project and TAN Document Control Center using Forms 416.04, "QA Record(s) Validation/Verification Form"/241.07, "Records Analysis and Transmittal Form."

5. RECORDS

Record Description	Classification	Uniform File Code	Disposition Authority	Retention Period
TPR-6230 Case File	INEEL Lifetime QA WIPP-WAP Nonpermanent QA	0250	A16-1.1	Permanent. Cut off when superseded, obsolete, or canceled.
Field TRUPACT-II Loading File: – Consumable TPR-6230 ✓ – Maintenance Record Form, as needed – PATCDs, as applicable – SWB Assembly Details report, as applicable – Shipment Packs and Subassemblies report, as applicable – Radiological Survey ✓ Maps – INEEL Form 433.34, ✓ INEEL Lift Plan – INEEL Form 433.34A, ✓ INEEL Lift Plan Supplement	WIPP-WAP Lifetime QA INEEL Nonpermanent QA	7403	ENV1-k-2-b EPI*	Cut off at project completion. Destroy 25 years after project completion.
INTEC-QA-0208, Quality ✓ Inspection Plan	INEEL Lifetime QA	7204	A17-32-A	Retain until item is removed from service.

6. REFERENCES

DOE-STD-1090-2001, DOE Hoisting and Rigging Standard

INEL-94/0209, "TANO Technical Safety Requirements"

TAN-JSA-6230

DOE/WIPP 02-3183, CH Packaging Program Guidance*

DOE/WIPP 02-3184, CH Packaging Operations Manual*

DOE/WIPP 02-3185, CH Packaging Maintenance Manual*

MCP-139, Radiological Surveys

MCP-535, Inspection and NDE Personnel Certification

MCP-1819, TRUPACT-II Receipt Inspection and Shipment

MCP-2514, Management of Construction Projects

MCP-2985, Operations Procedures

MCP-3003, Performing Pre-Job Briefings and Post-Job Reviews

PLN-577, TRUPACT-II Authorized Methods for Payload Control (TRAMPAC) Compliance Plan

PQR-LT17, Process Qualification Report

Radiological Control Manual

TRUPACT-II Certificate of Compliance*

TPR-1648, TRUPACT-II Payload Assembly Operation

TPR-1666, TRUPACT-II Loading Operation in WMF-635

* Controlled copies can be viewed on the WIPP Homepage http//www.wipp.carlsbad.nm.us

7. APPENDIXES

Appendix A – Procedure Basis

Appendix B – Comment Sheet

Appendix C – TRUPACT-II Packaging Weights (pounds)

Appendix D – OCV/ICV Inspection and Preparation

APPENDIX A

Procedure Basis

Step	Basis	Reference
General	Activities affecting quality shall be prescribed by and performed in accordance with documented instructions, procedures, or drawings that include appropriate quantitative or qualitative acceptance criteria for determining that prescribed results have been satisfactorily attained.	PRD-5076, Section 4.1.1.1
2.2	Upon completion, original TRUPACT-II Maintenance Records and copies of supporting documentation shall be transmitted to the WTS Transportation Project, P.O. Box 2078, Carlsbad, NM, 88221, and become a part of the permanent TRUPACT-II system record. All maintenance, repairs performed, or components replaced will be documented using the maintenance record. Information regarding preparation of the maintenance record is outlined in Section 5.6 of DOE/WIPP 02-3183. Records shall be maintained by the WIPP M&O contractor to document completion of the maintenance schedule.	DOE/WIPP 02-3183, Sections 2.2 and 5.0
2.3	The Adjustable Center-of-Gravity Lift Fixture (ACGLF) is designed to handle the weight of the following configurations: ▪ an OCA lid assembly ▪ an ICV lid ▪ an empty ICV assembly ▪ a loaded payload (i.e., 14 drums), two SWBs, or one ten-drum overpack (TDOP). The ACGLF is **NOT** designed to lift the weight of the following configurations: ▪ a loaded CH package or empty CH packaging ▪ a loaded or empty OCA ▪ a loaded ICV.	DOE/WIPP 02-3183, Section 1.6.4
2.5	Annual and 5 years inspections, testing, certifications are performed as a set (lid and body).	DOE/WIPP 02-3185, Section 3

APPENDIX A

Step	Basis	Reference
2.6, 2.7, 2.8, 2.10 through 2.16, 3.1.2, 3.1.4, 3.4.1, 4.2 Note, 4.4.2 Warning, 4.5.1, 4.5.6, 4.5.9 Caution, 4.5.10, 4.5.12, 4.5.12 Warning, 4.5.13, 4.5.15.6, 4.5.15.6.1, 4.5.15.5 Caution, 4.5.15.9 Warning, 4.5.15.9, 4.5.15.10, 4.5.15.16 Warning, 4.5.18, 4.5.18.1, 4.5.29, 4.5.30, 4.6.1, 4.6.3, 4.6.3.1, 4.6.9 Caution, 4.7.2, 4.7.11, 4.7.12 Warning, 4.7.12, 4.7.13.2, 4.7.13.3, 4.8.5, 4.8.10 Caution, 4.9.2 Warning and Note, 4.9.4, 4.9.7.2	Implementation of JSA requirements	TAN-JSA-6230
Note preceding 4.2.1	If required, clean and/or dry the package before transport to a designated area. The package may be cleaned with water and dampened cloths or a soft brush. Used cleaning materials should be managed according to site waste management procedures.	DOE/WIPP 02-3183, Section 4.3.1
4.2.1	Record OCA serial number on Attachment 1, CH Packaging Receipt and Inspection Data Sheet.	DOE/WIPP 02-3184, Section 2.2.1
Caution preceding 4.2.2	A physical check shall be made to verify the air bags on the trailer have fully inflated before the trailer is moved by a user site trailer jockey. Failure to do so may cause the tires to rub on the bottom of the rear packaging.	DOE/WIPP 02-3183, Section 4.3.2
4.2.2	Position the transport trailer in a designated parking area. Lower the trailer jacks (landing gear) ensuring the trailer is level. Install wheel chocks. Install trailer stands on free-standing trailers.	DOE/WIPP 02-3184, Section 2.2.6 through 2.2.9

APPENDIX A

Step	Basis	Reference
Caution preceding 4.3.1	The adjusting nuts must be loosened until the tension has been released from the Bellville springs when releasing the tie-down assemblies. The U-bolts can then be lifted and rotated outward away from the tie-down lugs. The U-bolts must be lowered as far as possible onto the trailer bracket below the tie-down lugs to prevent damage to the packaging exterior and the U-bolts.	DOE/WIPP 02-3183, Section 4.2.1
4.3.1	[A] Loosen tie-down adjusting nuts.[B] Lift tie-down assemblies from tie-down lugs. [C] Rotate away from lugs. [D] Lower completely to trailer brackets.	DOE/WIPP 02-3184, Section 2.3.2
4.3.2	Rotate the four forklift pocket covers (4) to the UP position, or remove the covers and store in a designated area.	DOE/WIPP 02-3184, Section 2.3.3
Caution preceding 4.5.6, 4.5.11, 4.5.15.1, 4.5.15.8, 4.7.2, 4.7.13.3, and 4.8.6	Verify that the two ACGLF counterweights are located at the 180 and 000° positions, respectively, prior to lifting an ACGLF, lid or payload.	DOE/WIPP 02-3183, Section 4.3.2
Caution preceding 4.4.1	Tip-back may damage the exterior surface when a forklift is used to relocate a packaging.	DOE/WIPP 02-3183, Section 4.3.2
Note preceding 4.5.1	Rotation of the ACGLF weights should be used to assist in the removal of the OCA and ICV lids; however, care must be taken to verify the weights are positioned in the 180 and 000° positions prior to lifting either lid.	DOE/WIPP 02-3183, Section 4.3.1
4.5.3	Prepare the OCA lid by removing the following: ▪ OCA lid lift pocket covers ▪ OCV lock ring bolts (6) ▪ OCA test port access plug and thermal plug ▪ OCA vent port access plug and thermal plug ▪ Remove OCV seal-test port plug ▪ Remove OCV vent port cover ▪ Remove OCV vent port plug.	DOE/WIPP 02-3184, Sections 2.4.1 through 2.4.4
4.5.7	Lower the ACGLF legs into the lift pockets on the OCV lid using crane.	DOE/WIPP 02-3184, Section 2.4.6
4.5.8	Verify the ACGLF legs are locked.	DOE/WIPP 02-3184, Section 2.4.7
Caution preceding 4.5.9, 4.5.15.5, 4.6.9, and 4.8.10	Three operators should be able to rotate the locking ring with reasonable effort. Do not attempt to rotate the OCV or ICV lock ring assembly with mechanical force other than with the lock ring tool (an extension to provide additional leverage and control). Care should be used to prevent the lock ring from slamming into the stops.	DOE/WIPP 02-3183, Section 4.3.2
4.5.9	Rotate lock ring to "UNLOCK" position.	DOE/WIPP 02-3184, Section 2.4.11

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Step	Basis	Reference
4.5.9.1 through 4.5.9.14	▪ Install vent port tool (2077-091-A2). ▪ Connect vacuum line to vent port tool. ▪ Start vacuum pump and evacuate to 3 in. Hg minimum/58 Torr abs minimum. ▪ Pull a vacuum until lock ring can be rotated. ▪ Stop vacuum pump. ▪ Disconnect vacuum line from vent port tool. ▪ Remove vent port tool.	DOE/WIPP 02-3184, Sections 2.4.8 through 2.4.14
Caution preceding 4.5.11	When lifting the OCA lid, verify through the use of a load cell that the load exerted on the lift pockets does not exceed 7,500 lb. (Load cell indication of 10,000 lb minus weight of the ACGLF @ 2,500 lb = 7,500 lb load.) An indication of 10,000 lb or greater may mean the lid is binding.	DOE/WIPP 02-3183, Section 4.2.2
4.5.11	Remove OCA lid.	DOE/WIPP 02-3184, Section 2.4.16
4.5.11.1	**IF** lid does not lift off, **THEN** perform the following: a. Contact supervisor. b. GO TO Step 3.2, OR Step 3.3, attempt to remove lid, and RETURN TO Step 2.4.18.	DOE/WIPP 02-3184, Section 2.4.17
4.5.14	Place the OCA lid on storage stand.	DOE/WIPP 02-3184, Section 2.4.18
4.5.27	Operator shall verify two ACGLF counterweights are 180 and 000,° respectively, BEFORE lifting ACGLF or lid.	DOE/WIPP 02-3183, Section 4.3.2
4.5.15.4	Lower the ACGLF legs into lift pockets on the ICV lid using crane.	DOE/WIPP 02-3184, Section 2.5.2
4.5.15.7	Verify the ACGLF legs are locked.	DOE/WIPP 02-3184, Section 2.5.3
4.5.15.1	Prepare the ICV lid by removing the following: ▪ Remove ICV Lock Ring Bolts (3) ▪ Remove ICV Vent-Port Cover ▪ Remove ICV Seal Test Port Plug ▪ Remove ICV Outer Vent-Port Plug ▪ Remove ICV Inner Vent-Port Plug.	DOE/WIPP 02-3184, Sections 2.5.4 through 2.5.6

APPENDIX A

Step	Basis	Reference
4.5.15.5.1 through 4.5.15.5.16	Unlock the ICV lock ring by performing the following: ▪ Install ICV vent port tool (2077-091-A1). ▪ Connect vacuum line to vent port tool. ▪ Start vacuum pump and evacuate to 3 in. Hg minimum/50 Torr abs minimum. ▪ Rotate the ICV lock ring to the UNLOCKED position. ▪ Stop vacuum pump. ▪ Disconnect vacuum line from vent port tool. ▪ Remove vent port tool.	DOE/WIPP 02-3184, Sections 2.5.7 through 2.5.13
Caution preceding 4.5.15.8	When lifting the ICV lid, verify through the use of a load cell that the load exerted on the lift pockets does not exceed 5,000 lb. (Load cell indication of 7,500 lb or greater may mean the lid is binding.)	DOE/WIPP 02-3183, Section 4.2.2
4.5.15.8	Remove ICV lid using ACGLF and crane.	DOE/WIPP 02-3184, Section 2.5.15
4.5.15.14	Place ICV lid on storage stand.	DOE/WIPP 02-3184, Section 2.5.17
4.5.12, 4.5.15.9	Radiological Control Technician (RCT): **IF** surveys for items in Steps 2.7.1, 2.8.1, or 2.9.1 have been previously completed, **AND** results are below contamination limits, **THEN** enter applicable information for each step on Attachment 1.	DOE/WIPP 02-3184, Section 2.6.1
4.5.15.16	Steps 2.7 through 2.13 (and substeps in those steps) must be completed, but may be performed in any order as long as radiological control steps are not bypassed.	DOE/WIPP 02-3184, Note preceding Section 2.7
Caution preceding 4.5.17	Operator shall verify two ACGLF counterweights are located at the 180 and 000,° respectively, BEFORE lifting ACGLF or lid.	DOE/WIPP 02-3184, Caution preceding Section 2.16.3
4.5.16	Attach the appropriate legs/adapter to the ACGLF.	DOE/WIPP 02-3184, Section 2.16.3
4.5.18	Lower the ACGLF long legs into the drum payload assembly guide tubes using crane and ACGLF until the red stripes are no longer visible, OR lower SWB or TDOP adapter until no load is indicated on the crane load cell.	DOE/WIPP 02-3184, Section 2.16.4
4.5.19	Lock the ACGLF legs, OR attach the SWB lift fixture to the upper SWB or TDOP adapter to TDOP, as applicable.	DOE/WIPP 02-3184, Section 2.16.5
4.5.20	If necessary, balance the payload using the counterweight controls at the ACGLF console until a reading of ± 0.5° is obtained.	DOE/WIPP 02-3184, Section 2.16.7
4.5.22	Raise and position the payload assembly over the ICV cavity using crane and ACGLF.	DOE/WIPP 02-3184, Section 2.16.13
Caution preceding 4.6.2	Operator shall verify that the two ACGLF counterweights are at 180 and 000° BEFORE lifting an ACGLF or lid.	DOE/WIPP 02-3183, Section 4.3.2

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Step	Basis	Reference
4.6.3	Lower the ACGLF legs into the lifting pockets on the ICV lid using crane.	DOE/WIPP 02-3184, Section 2.17.4
4.6.4	Verify the ACGLF legs are locked.	DOE/WIPP 02-3184, Section 2.17.5
4.6.7	Align UNLOCK arrows and install the ICV lid onto the ICV body using crane on ACGLF.	DOE/WIPP 02-3184, Section 2.17.6
Note preceding 4.5.15.5	The ICV is designed for safe operation with a full internal vacuum. However, due to the possible presence of VOCs in the payload, general operations of the loaded ICV shall be accomplished using less than 15-in. Hg vacuum (a minimum absolute pressure of 300 Torr when the payload is in the ICV).	DOE/WIPP 02-3183, Section 4.3.1
4.6.17	Install the three ICV lock ring bolts and torque to 28 to 32 ft-lb each.	DOE/WIPP 02-3184, Sections 2.17.16 and 2.17.17
4.8.1	Steps are covered in Appendix D and include all of Sections 2.26, 2.28, and 2.29.	DOE/WIPP 02-3184, Sections 2.7.4, 2.9.5 and 2.10.10
4.8.2	Match the OCA lid and body serial numbers. Record the OCA body serial number on Attachment 5.	DOE/WIPP 02-3184, Sections 2.18.1 and 2.18.2
Caution preceding 4.8.6	Operator shall verify that the two ACGLF counterweights are at 180 and 000° BEFORE lifting ACGLF or lid.	DOE/WIPP 02-3183, Caution preceding Section 4.3.2
4.8.6	Lower the ACGLF legs into the lifting pockets on the OCA lid using crane.	DOE/WIPP 02-3184, Section 2.18.3
4.8.7	Verify the ACGLF legs are locked.	DOE/WIPP 02-3184, Section 2.18.4
4.8.8	Install the OCV lid onto the OCV body.	DOE/WIPP 02-3184, Section 2.18.5
4.8.10	Rotate the lock ring to LOCKED position by ▪ Verify OCV vent port plug is retracted into OCV vent port tool ▪ Install the OCV vent port tool into OCV vent port ▪ Connect the vacuum line to the OCV vent port tool ▪ Start vacuum pump and evacuate to 3-in. Hg minimum/58 Torr abs minimum ▪ Rotate the OCV lock ring to LOCKED position ▪ Stop vacuum pump and disconnect the vacuum line from vent port tool.	DOE/WIPP 02-3184, Sections 2.18.13 through 2.18.16
4.8.15	Install the six OCV lock ring bolts, and torque to 28 to 32 ft-lb each.	DOE/WIPP 02-3184, Sections 2.18.14 and 2.18.15
Caution preceding 4.9.2	Tip-back may damage the exterior surface when a forklift is used to relocate a packaging.	DOE/WIPP 02-3183, Section 4.3.2
4.9.5	Load package designated for position #1 onto trailer with vent port on driver side of trailer.	DOE/WIPP 02-3184, Section 2.19.5 [F]
4.9.6	If applicable, load package designated for position #2 onto trailer with vent port on driver side of trailer.	DOE/WIPP 02-3184, Section 2.19.5 [G]

APPENDIX A

Step	Basis	Reference
4.9.7	Install four tie-down assemblies for each package loaded on trailer.	DOE/WIPP 02-3184, Section 2.19.5 [I]
Caution preceding 4.10.2	A physical check shall be made to verify the air bags on the trailer have fully inflated before the trailer is moved by a user site trailer jockey. Failure to do so may cause the tires to rub on the bottom of the rear packaging.	DOE/WIPP 02-3183, Section 4.3.2
4.5.21	If necessary, balance payload using counter weight controls at ACGLF console until a reading of + or – 0.5° is obtained.	DOE/WIPP 02-3184, Sections 2.24.4 and 2.24.6

APPENDIX B

Comment Sheet

NOTE: *Any documents (Such as NCRs, WOs, DRs) issued to close, track, or resolve comments are recorded in the comment section.*

Initial	Date/Time	Page No.	Step No.	Comments/Notes/Observations
MC	1-27-03/1215	14	4.5.2	TID SEAL FOUND BROKEN. NOTIFIED SS AND DOUG WALLE. RECEIVED PERMISSION FROM CBFO TO CONTINUE OPERATIONS
MC	1-27-03/1345	20	4.5.16.5.9	PRIOR TO REMOVAL OF THE ICV VENT PORT PLUG, THE ICV LOCK RING ROTATED WITH VERY LITTLE EFFORT (THE INTENT WAS TO PREPARE TO ROTATE) THIS HAPPENED WITH THE PORT PLUG FULLY INSTALLED AND NO VACUUM ON THE CASK. NOTIFIED SS THAT STEP WAS WORKED OUT OF SEQUENCE AND RECEIVED PERMISSION TO CONTINUE
MC	1-28-03/1630	25/26	4.5.32	STEP 4.5.32 WAS WORKED SEQUENTIALLY WITH STEP 4.6.1 & 4.6.2
[signature]	2/3/03 1815	39/52	5.	The TPR Case file is stored at TAN not to Be included in this procedure close-out. Also, the Maintenance Record Form, PATCDs, SWB Assembly detail Report, and shipment Packs and Subassemblies Report were not included. Because these forms are only applicable to loading SWBs with drums & assembling a TRU Pact shipment.

Add continuation pages as necessary.

APPENDIX C

Table 3.1. TRUPACT-II packaging weights (pounds).

Serial Number	TOTAL POUNDS	Serial Number	TOTAL POUNDS	Serial Number	TOTAL POUNDS
125	12,556	156	12,785	187	12,570
126	12,476	157	12,731	188	12,555
127	12,512	158	12,525	189	12,360
128	12,739	159	12,650	190	12,375
129	12,809	160	12,610	191	12,410
130	12,832	161	12,685		
131	12,630	162	12,525		
132	12,656	163	12,720		
133	12,670	164	12,710		
134	12,634	165	12,818		
135	12,556	166	12,737		
136	13,140	167	12,875		
137	13,100	168	12,876		
138	12,700	169	12,738		
139	12,550	170	12,755		
140	12,460	171	12,757		
141	12,475	172	12,739		
142	12,555	173	12,814		
143	12,580	174	12,691		
144	12,550	175	12,631		
145	12,650	176	12,854		
146	12,350	177	12,867		
147	12,500	178	12,650		
148	12,500	179	12,570		
149	13,136	180	12,560		
150	12,465	181	12,445		
151	12,470	182	12,510		
152	12,670	183	12,725		
153	12,627	184	12,605		
154	12,925	185	12,605		
155	12,690	186	12,530		

NOTE: *Additional TRUPACT-II unit weights can be obtained from the WIPP Waste Information System Packaging Reference Data table or the table provided by the WIPP Shipping Coordinator if not listed above.*

APPENDIX D

OCV/ICV Inspection and Preparation

Shipment No. EMPTY OCA
TRUPACT S/N 157

NOTE 1: *The steps in Appendix D may be performed simultaneously and out of sequence.*

NOTE 2: *Inspections for damage include checking for deformation, scratches, or burrs on metal components; and tears, nicks, flat spots, or cracks on O-rings. Any damage determined will be recorded in Appendix B, Comment Sheet.*

D-1. OCV Lid Inspection

RA D-1.1 Check the OCV lid for damage as follows:

- ~~A.~~ visible deformation
- ~~B.~~ dents or abnormal flat spot > ½ inch
- ~~C.~~ abnormal scratches or gouges
- ~~D.~~ obvious punctures, tears, or cracks in exposed welds
- ~~E.~~ distortions or cracks on or around lifting attachments.

RA D-1.2 Check the OCV lid and ensure the following conditions have been met:

- ~~A.~~ plastic burn-out plugs (3) are in place and intact
- ~~B.~~ fiberglass tubes are in place
- ~~C.~~ lid lift pocket covers are attached and serviceable
- ~~D.~~ OCV locking Z-Flange screws are in place and tight
- ~~E.~~ guide plates and screws are in place and tight
- ~~F.~~ locking ring is clean and undamaged
- ~~G.~~ sealing surfaces are clean and undamaged
- ~~H.~~ test access port threads are clean and undamaged.

D-1.2.1 Remove any foreign material found on the lock ring, sealing surfaces, or test access port threads.

D-2. OCV Body Inspection

MC D-2.1 Remove the upper and lower main O-rings and ensure they are clean and undamaged.

RA D-2.2 Check the OCV body (outer shell) for damage as follows:

- ~~A.~~ obvious punctures or tears
- ~~B.~~ obvious cracks in exposed welds
- ~~C.~~ dents or abnormal flat spot > ½ inch
- ~~D.~~ abnormal scratches or gouges.

RA D-2.3 Check the OCV body and ensure the following conditions have been met:

- ~~A.~~ six burn-out plugs are in place and intact
- ~~B.~~ eight forklift pocket inserts are intact and threads are undamaged
- ~~C.~~ six lock ring threaded ir intact and threads are undamaged

APPENDIX D

~~D.~~ ceramic fiber gasket is intact and undamaged (no tears or excessive wear)

~~E.~~ test port and threads are clean and undamaged

~~F.~~ vent port and threads are clean and undamaged

~~G.~~ lock ring flange is clean and undamaged

~~H.~~ O-ring grooves are clean and undamaged

~~I.~~ Sealing surfaces are clean and undamaged.

D-2.3.1 Remove any foreign material found on items E through I.

D-3. OCV Component Inspection

RA. D-3.1 Clean and inspect the following OCV components and ensure the noted conditions have been met:

~~A.~~ OCV vent port access plug is clean and undamaged

~~B.~~ OCV vent port plug and O-rings are clean and undamaged

- Seal O-ring is clean and intact

~~C.~~ OCV vent port cover and O-rings are clean and undamaged

- Seal O-ring is clean and intact

~~D.~~ OCV test port access plug is clean and undamaged.

~~E.~~ OCV test port plug and O-rings are clean and undamaged

- O-ring is clean and intact

~~F.~~ lock ring bolts (6) are clean and undamaged

~~G.~~ annulus debris shield is installed and intact

~~H.~~ upper main O-ring is clean and undamaged

NA 11-28-03 ~~I.~~ lower main O-ring is clean and undamaged.

NA D-3.2 IF any O-ring is damaged,
THEN replace the O-ring per WI CH.01/CH.02.

RA. D-3.3 Apply a very light coat of vacuum grease to the following:

~~A.~~ OCV vent port plug threads and sealing O-ring

~~B.~~ OCV vent port cover threads and sealing O-ring

~~C.~~ OCV test port plug threads and O-ring

~~D.~~ upper main O-ring

~~E.~~ lower main O-ring.

RA. D-3.4 Apply a light coat of Nickel bearing lubricant to the following:

~~A.~~ OCV lock ring bolt threads (6)

~~B.~~ OCV test port access plug threads

~~C.~~ OCV vent port access plug threads

RC D-3.5 Reinstall the upper and lower main O-rings.

Job/Title	JSA Number	Revision
TPR-6230, TRUPACT-157 Unloading and Loading Recovery Operations at TAN	TAN-JSA-6230	0

Facility/Project & Location	Effective Date	Facility/Project Management/Supervisor Approval / Date
TAN-607	11/26/02	See DAR 96818
	Expiration Date 11/26/03	

SME APPROVAL (A "Yes" response requires a signature and date.)

No	Yes	SME	Signature	Date	No	Yes	SME	Signature	Date
☐	☒	Industrial Safety	See DAR 96818		☐	☒	Quality Assurance	See DAR 96818	
☐	☒	Industrial Hygiene	See DAR 96818		☐	☒	Engineering	See DAR 96818	
☐	☒	Safety Analysis	See DAR 96818		☒	☐	Safeguards/NMC		
☐	☒	RCT/RAD Eng.	See DAR 96818		☒	☐	Maintenance		
☐	☒	Operations	See DAR 96818		☒	☐	Fire Protection		

Briefly Describe The Job and Expected Result

This job unloads the TPUPACT-157 at Test Area North (TAN), removes the Inner Containment Vessel (ICV) from the Outer Containment Vessel (OCV), and loads the OCV.

Required Job Training/Required Personal Protective Equipment

Training: Radworker II, HAZWOPER/TSD, TAN access Job position, hoisting and rigging, pre-job briefing.

PPE: Safety shoes, leather gloves, latex/nitrile/butyl rubber gloves, safety glasses with side shields, and other PPE as required by the RWP.

Sequence Of Basic Job Steps	Potential Hazards	Hazard Control/PPE (other than that listed above)
1. General	a. Pinching, smashing	a. Two spotters must be present when using the forklift to move containers.
	b. Hoisting/rigging	b. Critical lifts require use of a Person in Charge (PIC). Periodic inspections are performed on hoisting and rigging equipment.
	c. Pinching, cuts, scrapes, and burns	c. Leather gloves must be worn when handling hot surfaces.
	d. Foot injury	d. Safety shoes must be worn when in the TAN Hot Shop.
	e. Smashing	e. Parts of the body must not be placed under suspended loads with the following exceptions: ACGLF adjustments/log changes, and guiding leg insertions.
	f. Pinching	f. Non-essential personnel must stay clear during ACGLF operation.
	g. Radiological	g. Ensure RWP is followed and use good ALARA practices.
	h. Carbon monoxide exposure	h. If fossil–fueled vehicle runs continuously, without a ventilation hose attached, for more than approximately 10 minutes inside the building a CO monitor must be obtained from Industrial Hygiene for use.
	i. Lifting strain	i. Proper lifting techniques must be used when handling heavy objects.
	j. Confined space	j. The interior of the TRUPACT-II is a non-permit confined space. Only hands/arms may break the plane of the TRUPACT-II interior. Contact IH for further direction is the face must break the plane.
	k. Heat stress	k. Heat stress monitoring must be performed per MCP-9240.

Sequence Of Basic Job Steps	Potential Hazards	Hazard Control/PPE (other than that listed above)
2. TRUPACT-II Trailer Preparations	a. See general hazards	
	b. Waste disposal	b. Used cleaning materials must be managed per INEEL waste management procedures.
3. Releasing Tiedowns	a. See general hazards	
4. Transfer the TRUPACT-II	a. See general hazards	
5. Unloading a Payload Assembly	a. See general hazards	
	b. Non-permit confined space	b. A survey extension tool must be used when surveying the interior of the TRUPACT-II.
	c. Ergonomic	c. Personnel awareness and good body positioning, use of multiple operators, and use of extended handle must be practiced when rotating the ICV or OCV lock ring assembly.
	d. Chemical	d. IH perform volatile organic compound (VOC) air sampling of OCV/ICV lid interior.
6. ICV Lid Installation	a. See general hazards	
	b. Ergonomic	b. Personnel awareness and good body positioning, use of multiple operators, and use of extended handle must be practiced when rotating the ICV or OCV lock ring assembly.
CV Removal from OCV	a. See general hazards	
	b. Non-permit confined space	b. A survey extension tool must be used when surveying the interior of the TRUPACT-II.
8. OCV Lid Installation	a. See general hazards	
9. Transfer TRUPACT-II to Transport Trailer	a. See general hazards	
	b. Chemical	b. Latex, nitrile or butyl rubber gloves and safety glasses with side shields must be worn when using nickel-based anti-seize compound.
	c. Lifting/pinching	c. Use proper lifting techniques and be aware of pinching hazards when disassembling/reassembling platforms.
10. Releasing the TRUPACT-II Trailer	a. See general hazards	

412.11
09/12/2002
Rev. 08

DOCUMENT MANAGEMENT CONTROL SYSTEM (DMCS)
DOCUMENT ACTION REQUEST (DAR)

new 11/26/02 HS

1. Document ID: TAN-JSA-6230 | Current Revision ID: # [illegible] | See Block 8 for DAR # Info.

2. Document Title: TPR-6230, TRUPACT-157 ~~Payload Unassembly Operations at TAN~~ [illegible]

3. Requestor: C. Pusnegin | Phone: 6-6754 | MS: 5203 | E-mail: [illegible] | S No.: 060227

4. Type: [X] Document [ ] Drawing | 5. Type of action: [X] Create [ ] Revise [ ] Cancel

6. Field Change: [X] No [ ] Yes If Yes, will the change be: [ ] Permanent or [ ] Temporary? If Temporary, enter the field change duration

7. Proposed Action: Create new procedure

Item	Page No./ Section/Zone	Description	Justification
1	All	Create new JSA per attached.	A Hazards Evaluation Group (HEG) review and associated Job Safety Analysis (JSA) is required for TPR-6230.

8. Proposal Approval: [X] Accepted [ ] Deferred [ ] Rejected | DAR No.: 96818 (For Accepted Proposals Only)

If rejected, indicate reason: ______

Document Owner Printed Name: K.E. Streeper Signature: [signature] Date: 11-19-02

Is this a minor document change? [X] No [ ] Yes If Yes, proceed to Block 14. (For Operations procedures, go to Block 11.)

9. Management Approval (Excluding drawings, minor changes, & field changes):

Printed Name: K. E. Streeper Signature: [signature] Date: 11-19-02

10. Implementation Actions – Will the proposal require:

Hazard mitigation per MCP-3562 or MCP-3071? [ ] No [X] Yes If Yes, This is JSA for TPR-6230

Training? [ ] No [X] Yes If Yes, Pre-job briefing

Procurement activities? [X] No [ ] Yes If Yes, ______

Building modifications? [X] No [ ] Yes If Yes, ______

Other: None

11. Include a list of reviewers and review comments and resolutions with this form or have reviewers sign below.

Printed Name	Discipline	Org. No.	Signature	Date
K. M. Wendt	TAN System Engineer	5335	K. M. Wendt per Telecon [illegible]	11/19/[illegible]
[illegible]	Operations	6117	[signature]	11/19/02
J. Walker	Safety Analysis	5300	J. B. Walker per email [illegible]	11/19/02
J. K. Hider	TAN QA	5265	[signature]	11-19-02
S. R. Gamache	TAN Industrial Safety	5240	[signature]	11/14/02
D. J. Swanson	TAN RadCon	7610	[signature]	11-14-02
S. C. Combs	TAN IH	5240	S. C. Combs per Telecon [illegible]	11/14/02
~~D. Clark~~	~~Fire Protection~~		[illegible]	

12. Is document a TPR or EAR? [X] No [ ] Yes If Yes, indicate procedure validation method used:
[ ] Formal Walkdown [ ] Tabletop Analysis [ ] Limited Trial Use/Field Use [ ] Partial Validation

13. [X] Change does not affect a permitted area, TSD facility, or VCO component. (RCRA evaluation NOT required. Proceed to Block 14.)
[ ] Change does affect a permitted area, TSD facility, or VCO component.
Is RCRA permit/application modified: [ ] No [ ] Yes [ ] Unknown
If Yes or Unknown, attach completed Form 435.29 or reference form's location here: ______

E. Scott | [signature] for E. Scott per telecon | 11-19-02
Evaluator Printed Name | Evaluator Signature | Date

Is VCO component affected? [ ] No [ ] Yes If Yes, contact the VCO Program Office for direction.

14. USQ Screening: (To be completed only after final document review.) List any associated change forms: ______

Page 1

* Fire protection will review the procedure which covers the fire loading for the Hot Cell. cup 11/19/02

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09/12/2002
Rev. 09

DOCUMENT MANAGEMENT CONTROL SYSTEM (DMCS)
DOCUMENT ACTION REQUEST (DAR)

11/26/02

1. Document ID: TAN-JSA-6230	Current Revision ID: 0 11/26	See Block 8 for DAR # info.
Is USQ screening required? (See Instructions) ☐ Not Required (Proceed to Block 15) ☒ Required (Submit document and DAR to qualified USQ screener and attach USQ screening form.) ☒ USQ Evaluation Required? ☒ No ☐ Yes If Yes, attach evaluation. See USQ for TPR-6230		
15. Does this action qualify as a periodic review? ☐ No ☐ Yes ☒ N/A		
16. Desired effective date for document: Date of Block 18		
17. Other documents affected by this action: TPR-6230		
18. Document Owner Final Approval: (Changes in addition to those identified on this DAR, if applicable, have been approved during the review process. See document case file for corrections of changes.) Approval signifies implementation actions are complete or document is ready as a pending document. K. E. Streeper — [signature] — 11/26/02 Document Owner Printed Name — Document Owner Signature — Date		
19. Drawing Checker Approval & Date: N/A	20. Document Control Release & Date: [signature] 11-26-02	21. Document Control Location: TAN-607 [illegible]
22. Comments:		23. New Revision ID: 0

Page 2

INSPECTION IN UCTION FORM

RED ORIGINAL, BLACK COPY — INSPECTION RECORD COPY

spection Type: Construction ☐ Operations ☒ Receiving ☐ Source ☐ Requisition No.: N/A

tle/Description/Item: Quality Inspection of TRUPACT-157 Unloading and Loading Recovery Operations At Test Area North (TAN)

ec. No.: N/A Rev.: N/A Dwg. No.: As listed in TPR-6230 Rev.: N/A

sp. Plan No.: INTEC-QA-0208 ID No. (Work Order/Project/Purchase Order etc.): TPR-6230, rev. 0 Quality Level: SC/QL-1

spection Planner: Alan Huot JE Rubin for A. Huot 11/27/02 Date: 11/27/02 Requesting Organization Review (Optional): Kraig Wendt Date: 11/27/02

No.	Inspection Instruction & Acceptance Criteria	M&TE/Notes	Inspection Status/ Inspector Initial & Date
C-61	**GENERAL INSTRUCTIONS** This inspection plan is written for the Quality Inspector (QI) to inspect the loading and unloading operation of the Transuranic (TRU) Package Transporter (TRUPACT)-II Serial Number 157. This activity includes the removal of the Inner Containment Vessel (ICV) from the Outer Containment Vessel (OCV) at the Test Area North (TAN) Hot Shop. Applicable figures, if any, for this scope of work, are located in the associated Technical Procedure (TPR). If any anomalies are identified, immediately notify the OF or SS. If issues are not resolved by the OF or SS, notify the Shift Lead QE/QA Technical Lead and record the notification information on this form. **Note: Work will be evaluated per MCP-553 until issues are satisfactorily resolved.** When specific steps of TPR-6230 are not performed because the applicable portion of the TPR is not required to be performed, the corresponding step on this form must be Marked "N/A" and initialed and dated by the QI. ***PREREQUISITES:*** A qualified and certified QI certified per the requirements of MCP-535 shall perform all inspections. A. Inspections shall be performed by a General Level II QI that is RWMC TRUPACT-II certified. B. Indicate inspection status on all inspection steps/items in the Inspection Status column of this Inspection Plan (IP) with the following nomenclature: "sat" or "unsat"/"acceptable" or "unacceptable". QI add your initials and inspection date. C. Any unacceptable inspection results shall be documented on a Quality Inspection Report, form # 414.03 with reference back to the work authorization document and Step# that is associated with the step, item or process. D. Record all NCR's issued against this item/process in the "Inspection Status" column of this IP that it is associated with. The document should reference back to the work authorization document. E. Attach all inspection reports to this IP documenting work covered. F. Ensure all unacceptable inspection reports are noted in the work authorization document. G. Ensure suspect counterfeit items covered by MCP-9110 are not used in the process of this IP. H. QI shall verify that all in-process and final inspections are performed to the latest figure revisions. I. QI shall sign/initial both the appropriate TPR-6230 Steps and this Inspection Instruction Form.	N/A	N/A

No.	Inspection Instruction & Acceptance Criteria	M&TE/Notes	Inspection Status/ Inspector Initials & Date
1.	Verify TPR Number, Title, and Revision Number.		SAT RCJ 1-27-03
2.	**PERFORM THIS INSPECTION AT ANY TIME PRIOR TO LOADING THE TRUPACT ON THE TRAILER** Visually inspect accessible portions of the exterior of the trailer and TRUPACT-II containers for damage. If damage other than cosmetic damage is noted (e.g., cracked locking ring welds) take appropriate action per the **GENERAL INSTRUCTIONS** of this IP. (Management Request) Verify that there is no trailer or TRUPACT-II damage recorded on the package shipping forms. (Management Request) **Note:** This inspection should be performed at TAN prior to the trailer leaving for WIPP. If damage is recorded on any of the shipping forms, notify the Shift QE/QA Technical Lead, and follow the GENERAL INSTRUCTIONS of this IP.		
C-62	Ensure that tamper indicating devices (TIDs) have not been damaged. **Note:** Should there not be any TIDs (seals), "N/A" this inspection, initial and date. Should TIDs be damaged, stop work and notify the TL/SS, follow the GENERAL INSTRUCTIONS of the IP. (Step 4.5.2.1)	Vent Port TID Found broken. Notifications Made. Received Permission To Proceed.	See Remarks RCJ 1-27-03
4.	During OCV lid removal, verify that components are placed into labeled storage container. (Step 4.5.4.1)		RCJ 1-27-03 SAT
5.	During ICV lid removal, verify that components are placed into labeled storage container. (Step 4.5.15.2.1)		SAT RCJ 1-27-03
6.	Record torque wrench serial number and calibration due date in TPR-6230. • Verify that torque wrench is within range for the intended use. (Reference Table 3.3 of TPR-6230) • Verify calibration is current. (Step 4.8.3)		SAT RCJ 1-28-03

No.	Inspection Instruction & Acceptance Criteria	M&TE/Notes	Inspection Status/ Inspector Initials & Date
7.	Verify OCV seal test port plug is installed and torqued to specified values. (55 to 65 in.-lbs. **OR** 4.6 to 5.5 ft.-lbs.). (Step 4.8.4.1)		SAT RCJ 1-28-03
8.	Record torque wrench serial number(s) and calibration due date in TPR-6230 for port plugs and lock ring bolts. • Verify that torque wrench is within range for the intended use. (Reference Table 3.3 of TPR-6230) • Verify calibration is current. (Step 4.8.11)		SAT RCJ 1-28-03
9.	Verify torque of the OCV vent port plug and cover to specified values. (55 to 65 in.-lbs. **OR** 4.6 to 5.5 ft.-lbs.). (Step 4.8.13)		SAT RCJ 1-28-03
C-63	Verify torque of vent port/access plug, and thermal plug and seal/test port access plug and thermal plug to specified values. (420 to 540 in.-lbs. **OR** 35 to 45 ft-lbs. (Step 4.8.14)		SAT RCJ 1-28-03
11.	Verify torque of OCV lock-ring bolts to specified values (336 to 384 in.-lbs. or 28 to 32 ft-lbs.). (Step 4.8.15.1)		SAT RCJ 1-28-03
12.	Using a GO-NO-GO gauge, verify gap between disk spring container block and compression plate assembly of each tie-down. (Step 4.9.8.2)		SAT RCJ 1-29-03
13.	Inspect TRUPACT-II forklift pocket access covers for damage. Note: Should the forklift access covers be damaged, stop work and notify the TL/SS and follow the GENERAL INSTRUCTIONS of this IP. (Step 4.9.11)		SAT RCJ 1-29-03
14.	QE complete Quality Inspection Plan documentation required by Step 4.11 of the TPR. (Step 4.11)		JK Rule 2/3/03 SAT

INSPECTION IN .UCTION FORM

No.	Inspection Instruction & Acceptance Criteria	M&TE/Notes	Inspection Status/ Inspector Initials & Date
	OPTIONAL/ADDITIONAL COMMENTS:		

Final Inspection Documentation Review: JKMic / RJHunt Date: 2/3/03 / 2-3-03

INEEL LIFT PLAN

SEE INSTRUCTIONS

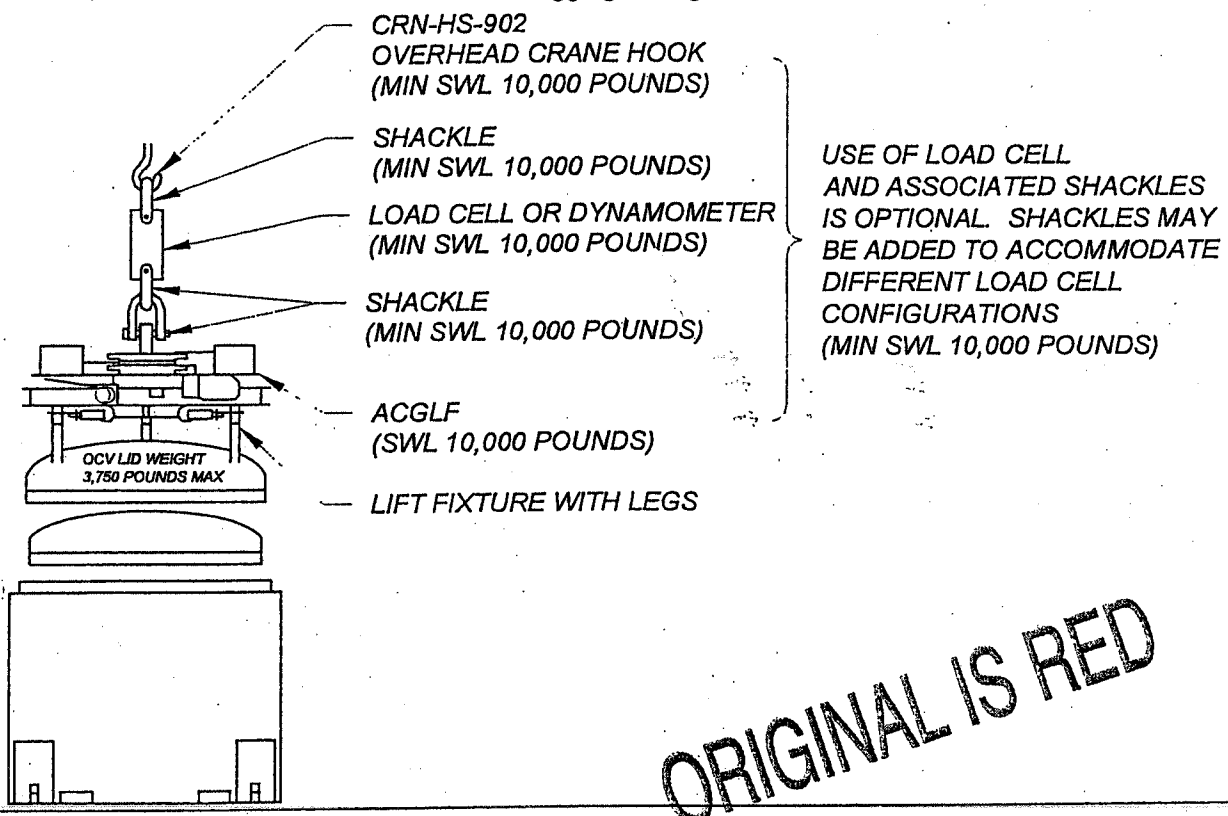
Lift Category: ☐ Critical Lift ☒ Pre-Engineered Product Lift ☐ Personnel Lift ☐ Ordinary Lift (optional)

Responsible Person: Doug Wale Phone: 6-1102 Date: 11/4/02

Facility: TAN-607 W.O./Procedures No.: TPR 6230 Index No. (optional): TP 157-01-0

Task: OCV LID HANDLING

Rigging Configuration Sketch



ORIGINAL IS RED

Weights:
3750 lbs

Dimensions:
~ 6 ft diameter

Comments:
Ref: RWMC lift plan from TPR-1668 Fig B-2 Rev 1.Dwg DAR 33980

APPROVALS

Responsible Manager Print/Type Name	Responsible Manager Signature	Date
N/A		
Safety Engineer Print/Type Name	Safety Engineer Signature	Date
J.R. GAMACHE		11/7/02
H&R Engineer Print/Type Name	H&R Engineer Signature	Date
BRET PAYNE	Bret Payne	11/7/02

433.34
05/13/02
Rev. 00

INEEL LIFT PLAN

SEE INSTRUCTIONS

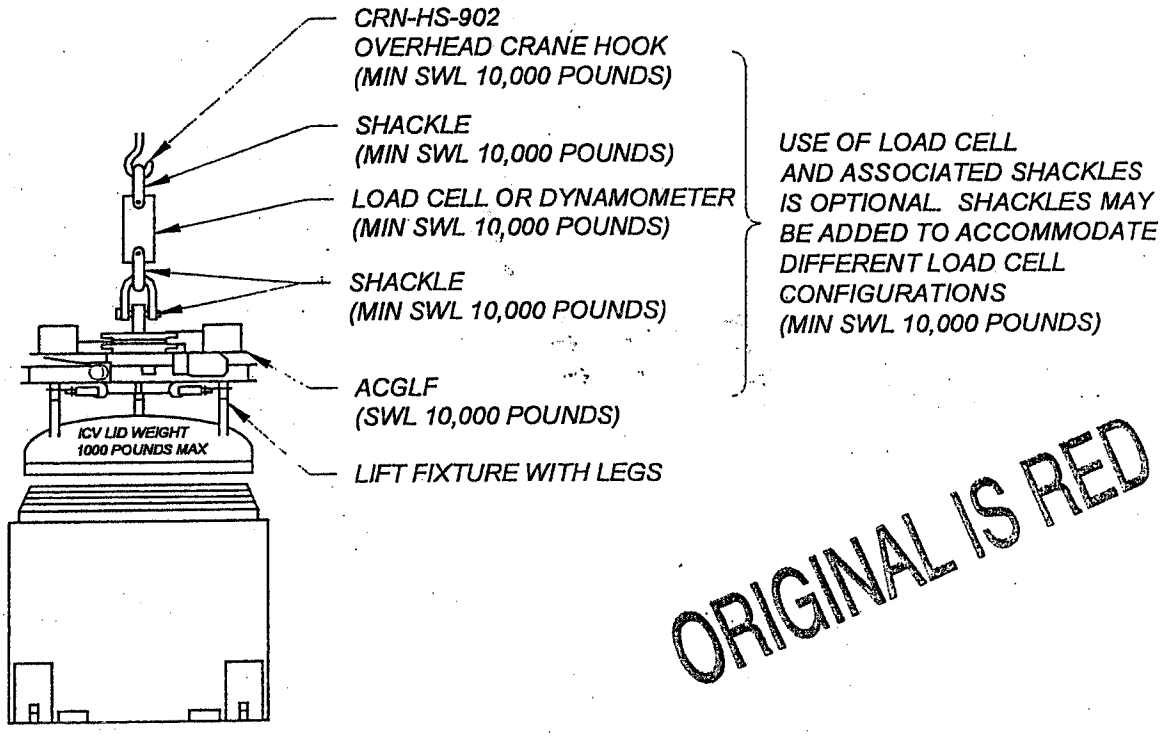
Lift Category: ☒ Critical Lift ☐ Pre-Engineered Product Lift ☐ Personnel Lift ☐ Ordinary Lift (optional)

Responsible Person: Doug Wale Phone: 6-1102 Date: 11/4/02

Facility: TAN-607 W.O./Procedures No.: TPR 6230 Index No. (optional): TP 157-02-0

Task: ICV LID HANDLING

Rigging Configuration Sketch



ORIGINAL IS RED

Weights:
945 lbs

Dimensions:
~ 6 ft diameter

Comments:
Ref: RWMC lift plan from TPR-1668 Fig B-3 Rev 1.Dwg DAR 33980
Internal vessel may be contaminated from previous condition.

APPROVALS

Kevin Streeper Responsible Manager Print/Type Name	K. Streeper Responsible Manager Signature	11-7-02 Date
S. R. GAMACHE Safety Engineer Print/Type Name	S. R. Gamache Safety Engineer Signature	11/7/02 Date
BRET PAYNE H&R Engineer Print/Type Name	Bret Payne H&R Engineer Signature	11/7/02 Date

433.34
05/13/02
Rev. 00

INEEL LIFT PLAN

SEE INSTRUCTIONS

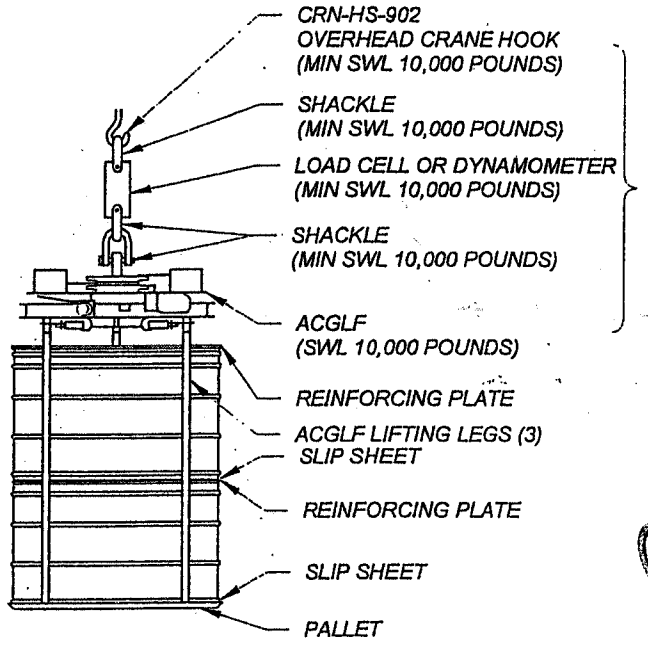
Lift Category: ☒ Critical Lift ☐ Pre-Engineered Product Lift ☐ Personnel Lift ☐ Ordinary Lift (optional)

Responsible Person: Doug Wale Phone: 6-1102 Date: 11/4/02

Facility: TAN-607 W.O./Procedures No.: TPR 6230 Index No. (optional): TP 157-03-0

Task: Payload Handling

Rigging Configuration Sketch



ORIGINAL IS RED

MAXIMUM TOTAL LOAD ON ACGLF: 7265 POUNDS

Weights:
7265 lbs

Dimensions:
~ 6 ft diameter x 7 ft height. (Double stack drum array)

Comments:
Ref: RWMC lift plan from TPR-1648 Fig B-1 Rev 1.Dwg DAR 33891
Internal vessel may be contaminated from previous condition.

APPROVALS

Kevin Stroeppe Responsible Manager Print/Type Name	Ken Stroeppe Responsible Manager Signature	11-7-02 Date
S.R. GAMACHE Safety Engineer Print/Type Name	S.R. Gamache Safety Engineer Signature	11/7/02 Date
BRET PAYNE H&R Engineer Print/Type Name	Bret Payne H&R Engineer Signature	11/7/02 Date

433.34
05/13/02
Rev. 00

INEEL LIFT PLAN

SEE INSTRUCTIONS

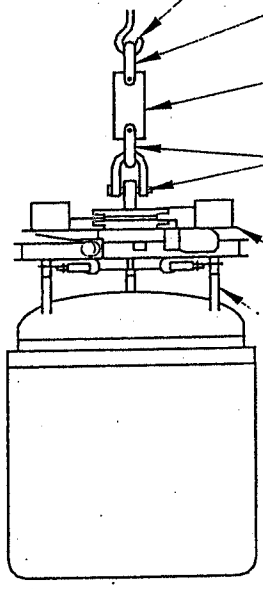
Lift Category: ☐ Critical Lift ☒ Pre-Engineered Product Lift ☐ Personnel Lift ☐ Ordinary Lift (optional)

Responsible Person: Doug Wale Phone: 6-1102 Date: 11/4/02

Facility: TAN-607 W.O./Procedures No.: TPR 6230 Index No. (optional): TP 157-04-0

Task: ICV Handling

Rigging Configuration Sketch



CRN-HS-902
OVERHEAD CRANE HOOK
(MIN SWL 10,000 POUNDS)

SHACKLE
(MIN SWL 10,000 POUNDS)

LOAD CELL OR DYNAMOMETER
(MIN SWL 10,000 POUNDS)

SHACKLE
(MIN SWL 10,000 POUNDS)

ACGLF
(SWL 10,000 POUNDS)

LIFT FIXTURE
WITH LEGS

USE OF LOAD CELL AND ASSOCIATED SHACKLES IS OPTIONAL. SHACKLES MAY BE ADDED TO ACCOMMODATE DIFFERENT LOAD CELL CONFIGURATIONS (MIN SWL 10,000 POUNDS)

ORIGINAL IS RED

ICV #157
LID WEIGHT: 945 POUNDS
BODY WEIGHT: 1,820 POUNDS
TOTAL ICV WEIGHT: 2,765 POUNDS

Weights:
2765 lbs

Dimensions:
~6 ft diameter x 8 ft height

Comments:
Ref: RWMC lift plan from ICV #157 rigging.dwg

APPROVALS

N/A Responsible Manager Print/Type Name	Responsible Manager Signature	Date
S.R. GAMACHE Safety Engineer Print/Type Name	Safety Engineer Signature	11/7/02 Date
BRET PAYNE H&R Engineer Print/Type Name	Bret Payne H&R Engineer Signature	11/7/02 Date

33.34A
05/13/2002
Rev. 00

INEEL LIFT PLAN SUPPLEMENT

SEE INSTRUCTIONS

Lift Category: ☐ Critical Lift ☒ Pre-Engineered Product Lift ☐ Personnel Lift ☐ Ordinary Lift (optional)

Responsible Person: Doug Wale Phone: 6-1102 Date: 1-27-03

Facility: TAN-607 W.O./Procedures No.: TPR-6230 Index No.: TP 157-01-0

Task: OCV Lid Handling

Equipment ID No.	Rigging Accessories Description	SRC	Inspection Expiration Date
HRH-20	1" Shackle	17,000#	7/31/03
HRI-1	1-1/2" Shackle	34,000 #	7/31/03
HRI-20	1-1/2" Shackle	34,000#	7/31/03
HRI-29	2" Shackle	70,000 #	11/14/03
714874	Dyno	40,000 #	2/11/03
CRN-HS-902	Hot Shop Crane	10 ton	~~3/8/03~~ 11-27-18
TRU-CGLF-3503	Lift Fixture	10,000#	1/14/04

Comments:

Qualified Operator or Rigger: Perform pre-operational checks listed on back of this form prior to first use on a shift.

Qualified Operator or Rigger Print/Type Name	Qualified Operator or Rigger Signature	Date
JAKE GREEN	John Green	1/27/03

Qualified Rigger (If different than Operator) Print/Type Name	Qualified Rigger (If different than Operator) Signature	Date

Person in Charge (PIC) or Designated Leader (DL): Verify that rigging has been inspected and that the configuration is consistent with corresponding INEEL Lift Plan Form 433.34. (Additional lines are provided for identically configured lifts that occur during the **same** shift.)

PIC or DL Print/Type Name	PIC or DL Signature	Date/Time
K.L. KYNASTON	[signature]	1-27-03/1220
K. L. KYNASTON	[signature]	1-28-03/1750

33.34A
05/13/2002
Rev. 00

INEEL LIFT PLAN SUPPLEMENT

SEE INSTRUCTIONS

Lift Category: ☐ Critical Lift ☒ Pre-Engineered Product Lift ☐ Personnel Lift ☐ Ordinary Lift (optional)

Responsible Person: Doug Wale Phone: 6-1102 Date: 1-28-03

Facility: TAN-607 W.O./Procedures No.: TPR-6230 Index No.: TP 157-04-0

Task: ICV Handling

Equipment ID No.	Rigging Accessories Description	SRC	Inspection Expiration Date
HRH-20	1" Shackle	17,000#	7/31/03
HRI-1	1-1/2" Shackle	34,000 #	7/31/03
HRI-20	1-1/2" Shackle	34,000#	7/31/03
HRI-29	2" Shackle	70,000 #	11/14/03
714874	Dyno	40,000 #	2/11/03
CRN-HS-902	Hot Shop Crane	10 ton	~~2/18/03~~ 1-28-03 ~~1-18-03~~
TRU-CGLF-3503	Lift Fixture	10,000	1/14/04

Comments:

Qualified Operator or Rigger: Perform pre-operational checks listed on back of this form prior to first use on a shift.

Qualified Operator or Rigger Print/Type Name	Qualified Operator or Rigger Signature	Date
JAKE GREEN		1/28/03

Qualified Rigger (If different than Operator) Print/Type Name	Qualified Rigger (If different than Operator) Signature	Date

Person in Charge (PIC) or Designated Leader (DL): Verify that rigging has been inspected and that the configuration is consistent with corresponding INEEL Lift Plan Form 433.34. (Additional lines are provided for identically configured lifts that occur during the **same** shift.)

PIC or DL Print/Type Name	PIC or DL Signature	Date/Time
K.L. KINGSTON		1.28.03/1730

33.34A
05/13/2002
Rev. 00

INEEL LIFT PLAN SUPPLEMENT

SEE INSTRUCTIONS

Lift Category: ☒ Critical Lift ☒ Pre-Engineered Product Lift ☐ Personnel Lift ☐ Ordinary Lift (optional)

Responsible Person: Doug Wale Phone: 6-1102 Date: 1-28-03

Facility: TAN-607 W.O./Procedures No.: TPR-6230 Index No.: TP 157-02-0

Task: ICV Lid Handling

Equipment ID No.	Rigging Accessories Description	SRC	Inspection Expiration Date
HRH-20	1" Shackle	17,000#	7/31/03
HRI-1	1-1/2" Shackle	34,000 #	7/31/03
HRI-20	1-1/2" Shackle	34,000#	7/31/03
HRI-29	2" Shackle	70,000 #	11/14/03
714874	Dyno	40,000 #	2/11/03
CRN-HS-902	Hot Shop Crane	10 ton	7/18/02 03
TRU-CGLF-3503	Lift Fixture	10,000	1/14/04

Comments:

Qualified Operator or Rigger: Perform pre-operational checks listed on back of this form prior to first use on a shift.

Qualified Operator or Rigger Print/Type Name	Qualified Operator or Rigger Signature	Date
JAKE GREEN		1/28/03

Qualified Rigger (If different than Operator) Print/Type Name	Qualified Rigger (If different than Operator) Signature	Date

Person in Charge (PIC) or Designated Leader (DL): Verify that rigging has been inspected and that the configuration is consistent with corresponding INEEL Lift Plan Form 433.34. (Additional lines are provided for identically configured lifts that occur during the **same** shift.)

PIC or DL Print/Type Name	PIC or DL Signature	Date/Time
R.L. KINGSTON		1-28-03/1645

33.34A
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INEEL LIFT PLAN SUPPLEMENT

SEE INSTRUCTIONS

Lift Category: ☐ Critical Lift ☒ Pre-Engineered Product Lift ☐ Personnel Lift ☐ Ordinary Lift (optional)

Responsible Person: Doug Wale Phone: 6-1102 Date: 1-28-03

Facility: TAN-607 W.O./Procedures No.: TPR-6230 Index No.: TP 157-03-0

Task: Payload Handling

Equipment ID No.	Rigging Accessories Description	SRC	Inspection Expiration Date
HRH-20	1" Shackle	17,000#	7-31-03
HRI-1	1-1/2" Shackle	34,000 #	7-31-03
HRI-20	1-1/2" Shackle	34,000#	7-31-03
HRI-29	2" Shackle	70,000 #	11-14-03
714874	Dyno	40,000 #	2-11-03
CRN-HS-902	Hot Shop Crane	10 ton	7-12-03/1-16-03
TRU-CGLF-3503	Lift Fixture	10,000	1-14-04

Comments:

Qualified Operator or Rigger: Perform pre-operational checks listed on back of this form prior to first use on a shift.

Jake Green — [signature] — 1-28-03

Qualified Operator or Rigger Print/Type Name | Qualified Operator or Rigger Signature | Date

Qualified Rigger (If different than Operator) Print/Type Name | Qualified Rigger (If different than Operator) Signature | Date

Person in Charge (PIC) or Designated Leader (DL): Verify that rigging has been inspected and that the configuration is consistent with corresponding INEEL Lift Plan Form 433.34. (Additional lines are provided for identically configured lifts that occur during the **same** shift.)

PIC or DL Print/Type Name	PIC or DL Signature	Date/Time
R.L. Kynaston	[signature]	1-28-03/1200

33.34A
05/13/2002
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INEEL LIFT PLAN SUPPLEMENT

SEE INSTRUCTIONS

Lift Category: ☐ Critical Lift ☒ Pre-Engineered Product Lift ☐ Personnel Lift ☐ Ordinary Lift (optional)

Responsible Person: Doug Wale Phone: 6-1102 Date: 1/27/03

Facility: TAN-607 W.O./Procedures No.: TPR-6230 Index No.: TP 157-02-0

Task: ICV Lid Handling

Equipment ID No.	Rigging Accessories Description	SRC	Inspection Expiration Date
HRH-20	1" Shackle	17,000#	7/31/03
HRI-1	1-1/2" Shackle	34,000 #	7/31/03
HRI-20	1-1/2" Shackle	34,000#	7/31/03
HRI-29	2" Shackle	70,000 #	11/14/03
714874	Dyno	40,000 #	2/11/03
CRN-HS-902	Hot Shop Crane	10 ton	~~3/8/03~~ 7-18
TRU-CGLF-3503	Lift Fixture	10,000	1/14/04

Comments:

Qualified Operator or Rigger: Perform pre-operational checks listed on back of this form prior to first use on a shift.

Qualified Operator or Rigger Print/Type Name	Qualified Operator or Rigger Signature	Date
JAKE GREEN		1/27/03

Qualified Rigger (If different than Operator) Print/Type Name	Qualified Rigger (If different than Operator) Signature	Date

Person in Charge (PIC) or Designated Leader (DL): Verify that rigging has been inspected and that the configuration is consistent with corresponding INEEL Lift Plan Form 433.34. (Additional lines are provided for identically configured lifts that occur during the **same** shift.)

PIC or DL Print/Type Name	PIC or DL Signature	Date/Time
K.L. KYNASTON		1-27-03 / 1325
K.L. KYNASTON		1-27-03 / 1440

461.01A
12/10/2001
Rev. 01

REQUEST FOR RADIOACTIVE MATERIAL SHIPMENT

Requestor Use Only

FROM: TAN 607 HOT SHOP FOR U.S. DOE Phone: _____
Mike Griffin Email: grifmd@inel.gov

TO: RWMC FOR U.S. DOE Phone: 526-2767
SCOVILLE, ID
83415

Chrg. No.: 200123FQ9 Org. No.: 3240

Desired shipping date: 2/4/2003 Required arrival date: 2/4/2003

Purpose of shipment: Transport TRUPACT 157 contents back to RWMC

Consignee notified/agrees to accept delivery Yes ☒ No ☐ Consignee: Randy Kendrick

Authorization No.: N/A Radioactive License No.: N/A

Radionuclide	Activity (TBq)	Weight of material containing activity (grams)
See Attachments		

Material net weight: 14650 Material net vol.: _____

Chemical Form: Oxides

Physical Form: Solid ☒ Liquid ☐ Gas ☐

Normal Form ☒ Special Form ☐ (Requires certification)

Additional Hazards: N/A

Preliminary RadCon Info:

3m from unshielded: N/A

1m from package: _____

Contact @ package: _____

'itional containers will require attachment sheet.
.ste container(s) activity data may defer to IWTS or TRIPS

Waste Information

IWTS Material Profile No.: N/A IWTS TASK No.: N/A UHWM required? Yes ☒ No ☐

IWTS Container(s) No.: N/A

Package Data

Describe current or proposed packaging: Seven WIPP Standard Waste Boxes, one plywood box with ICV

UN or DOT#: 7A-Type A C of C No.: N/A TID No.: N/A

No. of packages: 8 Size: SWB (4X6) Type: 1A2 55-gallon drums

Gross wt./ pkg: N/A Shipment gross wt.: 14650

Inner package? Yes ☒ No ☐ Size: 55 gallon Type: Metal drums

NOTES: This shipment will require two transport vehicles.

I HEREBY CERTIFY THAT THE ABOVE INFORMATION IS CORRECT AS INDICATED.

Requestor Print/Type Name Michael D. Griffin

Requestor Signature Michael D. Griffin

Date 2/3/2004

RadCon Use Only

Preshipment Survey Results

All required surveys are complete and results approved by supervisor have been provided to P&T.

RadCon Tech Printed Name and Signature _____ Date _____

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PRE-JOB BRIEFING CHECKLIST

Title: TRUPACT 157 PAYLOAD DISASSEMBLY OPS Procedure or Tracking #: TPR-6233

Name/Title of Person Conducting Briefing: K L KYNASTON Date/Time: 2-3-03 / 1105

The objective of a good pre-job briefing is to communicate an understanding of scope, hazards, and mitigation to enable the safe completion of work. Follow MCP-3003 for requirements. Additional Radiological Work Permit requirements found in box 10, page 2.

Initial each box upon completion of the section during the pre-job briefing. Mark N/A in the comment box if this section is not applicable to this job.	Initials
1. Discuss Scope of Work to be Performed and Limiting Conditions	KK
Comments:	
2. Review Hazards of the Job and Mitigation of those Hazards (JSA's, Permits, LO/TO)	KK
Comments:	
3. Review Work Procedures and Initial Conditions Involved	KK
Comments:	
4. Discuss Emergency Escape Routes	KK
Comments:	
5. Discuss Roles and Responsibilities/Stop Work/Training, and Work Restrictions	KK
Comments:	
6. Discuss Needed Tools and Equipment	KK
Comments:	
7. Discuss Safety/Radiological (see box 10)/Environmental Requirements/Wastes	KK
Comments:	
8. Discuss Error Likely/Feedback/Lessons Learned	KK
Comments:	
9. Summarize Scope/Hazards/and Responsibilities	KK
Comments:	

PRE-JOB BRIEFING CHECKLIST

Title: TI57 PAYLOAD DISASSEMBLY OPERATIONS Procedure or Tracking #: TTR-6233

10. Minimum Radiological Work Permit (RWP) Requirements	Additional Notes and Comments and other Building/Equipment/Process specific pre-job checklists covered.
Scope of work Radiological conditions of the workplace Procedural and RWP requirements Special radiological control requirements Radiologically limiting conditions (may void RWP) Radiological control hold points Communication & coordination with other groups Housekeeping and final cleanup provisions Emergency response provisions	RE PREJOB FOR DAR # 98552

Print Names of Workers	Training (1)	Badge No.	Craft or Job Title	Company Name (If not INEEL)	Briefing Date	Worker's Initials (2)

SEE ATTACHED

(1) Supervisor initials to verify employee's required training for planned work is current. Mark N/A for not applicable.
(2) Worker's initials indicate attendance at the pre-job briefing and satisfactory understanding of all items discussed.

By my signature, I indicate that I have conducted the pre-job briefing covering all items indicated above concerning the requirements specified for the work to be performed.

Person Conducting Briefing: [signature] Date/Time: 2-3-03 / 1120

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434.15
02/03/2000
Rev. 01

PRE-JOB BRIEFING ATTENDANCE RECORD

ork Documentation Tracking/Procedure Number: TPR-6233

Attach filled out form to applicable work control/permit documentation prior to starting work OR file as required by area/organizational procedures. Make copies as necessary.

Print Names of Workers	Training (1)	S/Visitor Badge No.	Craft or Job Title	Company Name (2)	Briefing Date	Worker's Initials (3)
Michael J. Galassi	ML	67558	SO	BBWI	2/3/03	MJG
JAMES WOLSKI	NA/ML	71715	Observer	DOE-ID	23-03	JW
Jimmy Hernandez	ML	58172	Mech	BBWI	2/3/03	
RC JUSTICE	ML	85504	QI	BBWI	2/3/03	RCJ
F. Bush	ML	61058	RCT	BBWI	2/3/03	FB
J. Ely	ML	86250	RCT	BBWI	2/3/03	JE
JAKE GREEN	ML	78067	ops		2/3/03	
Lyle McKillan	ML	51945	RCT.		2.3.03	
Rocky Allen	ML	56604	mech.	BBWI	2/3/03	RA.
Robin Killian	ML	77456	ops	BBWI	2/3/03	RK
Jody L. Schmardebeck	ML	52993	SO	BB WI	2-3-03	
Kelly Hoyle	ML	39819	SO	BBWI	2/3/03	
Lewis Bird	ML	53447	RCT		2-3-03	
Roger Jackson	ML	50666	RCT		2-3-03	RG
EC Lang	ML	50699	RCT		2-3-03	
Jon Johnston	ML	62673	RCT		2-3-03	
Gary L. Lusk	NA/ML	56428	LabCon		2-3-03	

1. Supervisor initials block verifying employee's training required to complete the planned work is current, mark N/A for not applicable when special training (ES&H or other) not required.
2. Briefing attendee required to fill this block if other than company employees, may leave blank for company employees.
3. Worker's initials to indicate attendance at pre-job briefing and satisfactory understanding for all items discussed.

3

PRE-JOB BRIEFING CHECKLIST

Title: TRU EXCAVATIONS Procedure or Tracking #: TPR-6233

Name/Title of Person Conducting Briefing: W.L. KINGSTON Date/Time: 1-31-03 / 1000

The objective of a good pre-job briefing is to communicate an understanding of scope, hazards, and mitigation to enable the safe completion of work. Follow MCP-3003 for requirements. Additional Radiological Work Permit requirements found in box 10, page 2.

Initial each box upon completion of the section during the pre-job briefing. Mark N/A in the comment box if this section is not applicable to this job.	Initials
1. Discuss Scope of Work to be Performed and Limiting Conditions	WL
Comments:	
2. Review Hazards of the Job and Mitigation of those Hazards (JSA's, Permits, LO/TO)	WL
Comments:	
3. Review Work Procedures and Initial Conditions Involved	WL
Comments:	
4. Discuss Emergency Escape Routes	WL
Comments:	
5. Discuss Roles and Responsibilities/ Stop Work/ Training, and Work Restrictions	WL
Comments:	
6. Discuss Needed Tools and Equipment	WL
Comments:	
7. Discuss Safety/ Radiological (see box 10), Environmental Requirements/Wastes	WL
Comments:	
8. Discuss Error Likely/ Feedback/ Lessons Learned	WL
Comments:	
9. Summarize Scope, Hazards, and Responsibilities	WL
Comments:	

4

PRE-JOB BRIEFING CHECKLIST

Title: PLANNED DISASSEMBLY TRIPLET OPERATIONS

Procedure or Tracking #: TPR-62.33

10. Minimum Radiological Work Permit (RWP) Requirements	Additional Notes and Comments and other Building/Equipment/Process specific pre-job checklists covered.
Scope of work Radiological conditions of the workplace Procedural and RWP requirements Special radiological control requirements Radiologically limiting conditions (may void RWP) Radiological control hold points Communication & coordination with other groups Housekeeping and final cleanup provisions Emergency response provisions	REMOVING DAMAGED GASKET MATERIAL ON SUB LIDS, RE-INSTALLING AND INSPECTING GASKETS, CONTINUING OPERATIONS

Print Names of Workers	Training (1)	Badge No.	Craft or Job Title	Company Name (If not INEEL)	Briefing Date	Worker's Initials (2)
Rocky Allpn	ML	51604	MECH.	BBWI	1/31/03	RA
Jimmy Hernandez	ML	58172	Mech	BBWI	1/31/03	JH
Blake McMurtrey	ML	44306	CARP.		1-31-03	BM
Jody L. Schwardeback	ML	52993	SO	BBWI	1-31-03	JLS
D Lang	ML	50699	RCT	BBWI	1-31-03	DL
RC Justice	ML	85504	QI	BBWI	1-31-03	RCJ
JAKE GREEN	ML	78067	OPS		1-31-03	JG
Michael J Galassi	ML	67558	SO	BBWI	1-31-03	MJG
Mel [illegible]	ML	40535	SO	BBWI	1-31-03	MJ
L McKinney	ML	51945	RCT		1.31.03	LM
Robin Killian	ML	77456	OPS		1/31/03	RK
Lewis Bird	ML	52447	RCT		1-31-03	LB

(1) Supervisor initials to verify employee's required training for planned work is current. Mark N/A for not applicable.
(2) Worker's initials indicate attendance at the pre-job briefing and satisfactory understanding of all items discussed.

By my signature, I indicate that I have conducted the pre-job briefing covering all items indicated above concerning the requirements specified for the work to be performed.

Person Conducting Briefing: [signature] Date/Time: 1-31-03 / 1050

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02/03/2000
Rev. 01

PRE-JOB BRIEFING ATTENDANCE RECORD

ork Documentation Tracking/Procedure Number: 7PIR-6237

Attach filled out form to applicable work control/permit documentation prior to starting work OR file as required by area/organizational procedures. Make copies as necessary.

Print Names of Workers	Training (1)	S/Visitor Badge No.	Craft or Job Title	Company Name (2)	Briefing Date	Worker's Initials (3)
Jon Johnston	ra	62673	RCT		1-31-03	
Gary L. Lusk	ra	56428	RadCon		1-31-03	
Jonathan Ely	ra	86250	RCT		1-31-03	JE
Michael Griffin	ra	55461	WCO/TCO		1-31-03	MG

1. Supervisor initials block verifying employee's training required to complete the planned work is current, mark N/A for not applicable when special training (ES&H or other) not required.
2. Briefing attendee required to fill this block if other than company employees, may leave blank for company employees.
3. Worker's initials to indicate attendance at pre-job briefing and satisfactory understanding for all items discussed.

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434.14
08/28/2001
Rev. 06

PRE-JOB BRIEFING CHECKLIST

TRUPACT-1&2 UNLOAD DISASSEMBLY OPERATIONS AT TAN

Job Title: LOADING STANDARD WASTE BOXES Procedure or Tracking #: TPR-6233

Name/Title of Person Conducting Briefing: K. L. KINASTON Date/Time: 1-29-03 / 0705

The objective of a good pre-job briefing is to communicate an understanding of scope, hazards, and mitigation to enable the safe completion of work. Follow MCP-3003 for requirements. Additional Radiological Work Permit requirements found in box 10, page 2.

Initial each box upon completion of the section during the pre-job briefing. Mark N/A in the comment box if this section is not applicable to this job.	Initials
1. Discuss Scope of Work to be Performed and Limiting Conditions	KL
Comments:	
2. Review Hazards of the Job and Mitigation of those Hazards (JSA's, Permits, LO/TO)	KL
Comments:	
3. Review Work Procedures and Initial Conditions Involved	KL
Comments:	
4. Discuss Emergency Escape Routes	KL
Comments:	
5. Discuss Roles and Responsibilities/ Stop Work/ Training/ and Work Restrictions	KL
Comments:	
6. Discuss Needed Tools and Equipment	KL
Comments:	
7. Discuss Safety/ Radiological (see box 10)/ Environmental Requirements/Wastes	KL
Comments:	
8. Discuss Error Likely/ Feedback/ Lessons Learned	KL
Comments:	
9. Summarize Scope/ Hazards/ and Responsibilities	KL
Comments:	

7

PRE-JOB BRIEFING CHECKLIST

Job Title: PAYLOAD DISASSEMBLY Procedure or Tracking #: TPR-6233

10. Minimum Radiological Work Permit (RWP) Requirements	Additional Notes and Comments and other Building/Equipment/Process specific pre-job checklists covered.
Scope of work Radiological conditions of the workplace Procedural and RWP requirements Special radiological control requirements Radiologically limiting conditions (may void RWP) Radiological control hold points Communication & coordination with other groups Housekeeping and final cleanup provisions Emergency response provisions	

Print Names of Workers	Training (1)	Badge No.	Craft or Job Title	Company Name (If not INEEL)	Briefing Date	Worker's Initials (2)
FARRELL Bush	RC	61058	RCT		1/29/03	FB
Kelly Hoyle	NA RC	39819	hA		1/29/03	KH
DARIS WELMER	RC	468576	OPS		1-29-03	DW
JAKE GREEN	RC	78067	OPS		1/29/03	JG
JARED O'BRIEN	NA RC	51686	ENGR		1/29/03	JOB
KIP Archibald	NA RC	54941	ENGR		1/29/03	KA
Kelly Thompson	RC	64384	QT		1/30/03	KET

(1) Supervisor initials to verify employee's required training for planned work is current. Mark N/A for not applicable.
(2) Worker's initials indicate attendance at the pre-job briefing and satisfactory understanding of all items discussed.

By my signature, I indicate that I have conducted the pre-job briefing covering all items indicated above concerning the requirements specified for the work to be performed.

Person Conducting Briefing: [signature] Date/Time: 1-29-03 / 0840

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434.15
02/03/2000
Rev. 01

PRE-JOB BRIEFING ATTENDANCE RECORD

Work Documentation Tracking/Procedure Number: TR-6233

Attach filled out form to applicable work control/permit documentation prior to starting work OR file as required by area/organizational procedures. Make copies as necessary.

Print Names of Workers	Training (1)	S/Visitor Badge No.	Craft or Job Title	Company Name (2)	Briefing Date	Worker's Initials (3)
Michael Griffin	NA/WL	55461	WCO/TCO	BBWT	1/29/03	MG
Mel Saunders	WL	40535	SO	BBWI	1/29/03	MS
R GINN	WL	33234	HEO	BBWI	1-29-03	RG
Judy L. Schmarebeck	WL	52993	SO	BBWI	1-29-03	JLS
Robin KILLIAN	WL	77456	OPS	BBWI	1/29/03	RK
Michael J. GALASSI	WL	67558	SO	BBWI	1/29/03	MJG
R.C. Justice	WL	85504	QI	BBWI	1/29/03	RCJ
Lewis Bird	WL	52447	RCT	BBWI	1-29-03	LB
JAMES WOLSKI	NA/WL	71715	Observer	DOE-ID	1-29-03	JW
Jon Johnston	WL	62673	RCT	BBWI	1-29-03	JJ
JAMES K. RIDER	NA/WL	62825	QA/QE OBSERVER	BBWI	1-29-03	JKR
Rob Bare	WL	32396	EO	BBWI	1/29/03	RB
Gary L. Lusk	NA/WL	56428	RadCon	BBWI	1/29/03	GLL
Ed Lang	WL	50699	RADCON	BBWI	1/29/03	EL
T Mott	WL	76252	IH	BBWI	1/29/03	TM
Jimmy Hernandez	WL	58172	Mech.	BBWI	1/29/03	JH
Rocky Allpin	WL	56604	MECH.	BBWI	1/29/03	RA
S.R. GAMACHE	NA/WL	55788	SAFETY	BBWI	1/29/03	SG
JERRY McNEW	NA/WL	62862	FACILITY REPRESENTATIVE OBSERVER	DOE-ID	1/29/03	JMN
Lyle McKinlay	WL	51945	R.C.T.	BBWI	1-29-03	LM
Jonathan Ely	WL	86256	RCT	BBWI	1-29-03	JE
Peter Jackson	WL	50666	RCT	BBWI	1/29/03	PJ

1. Supervisor initials block verifying employee's training required to complete the planned work is current, mark N/A for not applicable when special training (ES&H or other) not required.
2. Briefing attendee required to fill this block if other than company employees, may leave blank for company employees.
3. Worker's initials to indicate attendance at pre-job briefing and satisfactory understanding for all items discussed.

412.11
09/12/2002
Rev. 09

DOCUMENT MANAGEMENT CONTROL SYSTEM (DMCS)
DOCUMENT ACTION REQUEST (DAR)

1.	**Document ID: TPR-6233**	**Current Revision ID: 1**			**See Block 8 for DAR # Info.**
2.	Document Title: TRUPACT-157 PAYLOAD DISASSEMBLY OPERATIONS AT TAN				
3.	Requester: C. POSEGATE	Phone: 6-0188	MS: 9201	E-mail: CPOSEGAT	S No.: 60227
4.	Type: ☒ Document ☐ Drawing	5. Type of action: ☐ Create ☒ Revise ☐ Cancel			

6. Field Change: ☐ No ☒ Yes If Yes, will the change be: ☐ Permanent **or** ☒ Temporary? If Temporary, enter the field change duration: 1/31/2003 THUR ~~2/2/2003~~ 2-6-03

7. Proposed Action:

Item	Page No./ Section/Zone	Description	Justification
1	NEW SECTION ~~4.6~~ 4.7	SEE ATTACHMENT.	TO ALLOW FOR MOVING A DRUM FROM ONE SWB TO ANOTHER
2	step 4.1.2	Add "Moving A Drum From One SWB to Another SWB" section 4.7	add step to routing table
3	pg 29 step 4.5.18	Add six signature blocks as follows:	The individual signature blocks
		WCO:_____ Date:_____ SWB #:_____	allows for more than one shipment.

8. Proposal Approval: ☒ Accepted ☐ Deferred ☐ Rejected
DAR No.: 98552 (For Accepted Proposals Only!)
If rejected, indicate reason: _____
Document Owner Printed Name: K. Streeper Signature: C Posegate for K Streeper PTC Date: 1/31/03
Is this a minor document change? ☒ No ☐ Yes If Yes, proceed to Block 14. (For Operations procedures, go to Block 11.)

9. Management Approval (Excluding drawings, minor changes, & field changes):
Printed Name: Kevin Streeper Signature: C Posegate for K. Streeper PTC Date: 1/31/03

10. Implementation Actions – Will the proposal require:
Hazard mitigation per MCP-3562 or MCP-3571? ☒ No ☐ Yes If Yes, Hazards already addressed by existing JSA for TPR-6233 K.M.W 2-1-03
Training? ☐ No ☒ Yes If Yes, tabletop/Pre-Job Briefing
Procurement activities? ☒ No ☐ Yes If Yes, _____
Building modifications? ☒ No ☐ Yes If Yes, _____
Other: _____

11. Include a list of reviewers and review comments and resolutions with this form or have reviewers sign below.

Printed Name	Discipline	Org. No.	Signature	Date
GARY L LUSK	RAD CON FOREMAN	5243		1/31/03
S.R. GAMACHE	INDUSTRIAL SAFETY	5240		1/31/03
J.K. RIDER	TAN QA	5260	JK Rider	1/31/03
ALAN HUOT	SQAO	3200	JKRider for A.HUOT Per Telecon	1/31/03
K.L. KUNASTON	OPERATIONS	5240		1-31-03

12. Is document a TPR or EAR? ☐ No ☒ Yes If Yes, indicate procedure validation method used:
☐ Formal Walkdown ☒ Tabletop Analysis ☐ Limited Trial Use/Field Use ☐ Partial Validation

13. ☒ Change does not affect a permitted area, TSD facility, or VCO component. (RCRA evaluation NOT required. Proceed to Block 14.)
☐ Change does affect a permitted area, TSD facility, or VCO component.
Is RCRA permit/application modified: ☐ No ☐ Yes ☐ Unknown
If Yes or Unknown, attach completed Form 435.29 or reference form's location here: _____
E. Scott (Evaluator Printed Name) K.M. Wendt for E. Scott per Telecon (Evaluator Signature) 2-1-03 (Date)
Is VCO component affected? ☒ No ☐ Yes If Yes, contact the VCO Program Office for direction.

14. USQ Screening: (To be completed only after final document review.) List any associated change forms: _____
Is USQ screening required? (See Instructions) C Posegate for D. Swanson PTC 2-1-03
☐ Not Required (Proceed to Block 15) See RWMC-03-0006
☒ Required (Submit document and DAR to qualified USQ screener and attach USQ screening form.) K.M. Wendt 2-1-03
☒ USQ Evaluation Required? ☒ No ☐ Yes If Yes, attach evaluation. Refer to 03-USQ-TAN-0035 for TAN SAR

412.11
09/12/2002
Rev. 09

DOCUMENT MANAGEMENT CONTROL SYSTEM (DMCS)
DOCUMENT ACTION REQUEST (DAR)

1.	Document ID: TPR-6233	Current Revision ID: 1			See Block 8 for DAR # Info.
2.	Document Title: TRUPACT-157 PAYLOAD DISASSEMBLY OPERATIONS AT TAN				
3.	Requester: C. POSEGATE	Phone: 6-0188	MS: 9201	E-mail: CPOSEGAT	S No.: 60227
4.	Type: ☒ Document ☐ Drawing	5. Type of action: ☐ Create ☒ Revise ☐ Cancel			
6.	Field Change: ☐ No ☒ Yes If Yes, will the change be: ☐ Permanent or ☒ Temporary? If Temporary, enter the field change duration: 1/31/2003 THUR 2/2/2003				
7.	Proposed Action:				

Item	Page No./ Section/Zone	Description	Justification
1	NEW SECTION 4.6	SEE ATTACHMENT.	TO ALLOW FOR MOVING A DRUM FROM ONE SWB TO ANOTHER
2	step 4.1.2	Add "Moving A Drum From One SWB to Another SWB" section 4.7	add step to routing table
3	pg 29 step 4.5.18	Add six signature blocks as follows:	The individual signature blocks
		WCO:_____ Date:_____ SWB #:_____	allows for more than one shipment.

8. Proposal Approval: ☒ Accepted ☐ Deferred ☐ Rejected
DAR No.: 98552 (For Accepted Proposals Only!)
If rejected, indicate reason: _____
Document Owner Printed Name: K. Streeper N/A Signature: _____ Date: 1/31/03
Is this a minor document change? ☒ No ☐ Yes If Yes, proceed to Block 14. (For Operations procedures, go to Block 11.)

9. Management Approval (Excluding drawings, minor changes, & field changes): See page
Printed Name: _____ Signature: _____ Date: _____

10. Implementation Actions – Will the proposal require:
Hazard mitigation per MCP-3562 or MCP-3571? ☒ No ☐ Yes If Yes, _____
Training? ☐ No ☒ Yes If Yes, tabletop
Procurement activities? ☒ No ☐ Yes If Yes, _____
Building modifications? ☒ No ☐ Yes If Yes, _____
Other: _____

11. Include a list of reviewers and review comments and resolutions with this form or have reviewers sign below.

Printed Name	Discipline	Org. No.	Signature	Date
Kraig Wendt	TAN ENGINEERING	6760	C Posegate PTC K.M. Wendt	2·1·03
Colvin Jergins	SYSTEM ENGINEER	6760	C Posegate PTC	2·1·03
Al Millhouse	RWMC NFM.	5830	C Posegate PTC	2·1·03
MAx RUSKA	P&T	3280	C Posegate PTC	2·1·03

12. Is document a TPR or EAR? ☐ No ☒ Yes If Yes, indicate procedure validation method used:
☐ Formal Walkdown ☒ Tabletop Analysis ☐ Limited Trial Use/Field Use ☐ Partial Validation

13. ☐ Change does not affect a permitted area, TSD facility, or VCO component. (RCRA evaluation NOT required. Proceed to Block 14.)
☐ Change does affect a permitted area, TSD facility, or VCO component.
Is RCRA permit/application modified: ☐ No ☐ Yes ☐ Unknown
If Yes or Unknown, attach completed Form 435.29 or reference form's location here: _____
N/A
Evaluator Printed Name _____ Evaluator Signature _____ Date _____
Is VCO component affected? ☐ No ☐ Yes If Yes, contact the VCO Program Office for direction.

14. USQ Screening: (To be completed only after final document review.) List any associated change forms: _____
Is USQ screening required? (See Instructions)
☐ Not Required (Proceed to Block 15)
☐ Required (Submit document and DAR to qualified USQ screener and attach USQ screening form.)
☐ USQ Evaluation Required? ☐ No ☐ Yes If Yes, attach evaluation.
see pg 1

412.11
09/12/2002
Rev. 09

DOCUMENT MANAGEMENT CONTROL SYSTEM (DMCS)
DOCUMENT ACTION REQUEST (DAR)

1. Document ID: TPR-6233	**Current Revision ID: 1**	**See Block 8 for DAR # Info.**
5. Does this action qualify as a periodic review? ☒ No ☐ Yes ☐ N/A		
16. Desired effective date for document: 1/31/03		
17. Other documents affected by this action: none		
18. Document Owner Final Approval: (Changes in addition to those identified on this DAR, if applicable, have been approved during the review process. See document case file for the record of changes.) **Approval signifies implementation actions are complete or document is ready as a pending document.**		
K.E. Streeper Per Telecon — Document Owner Printed Name	Document Owner Signature	2-1-03 — Date
19. Drawing Checker Approval & Date:	**20.** Document Control Release & Date	**21.** Document Control Location:
22. Comments:		**23.** New Revision ID:

4.7 Moving a Drum From One SWB To Another SWB

NOTE 1: *This section is to be performed only if a drum needs to be moved from one SWB into another and steps in this section may be performed concurrently or out of sequence as directed by supervision .*

NOTE 2: *SWBs may be changed out at any time during the performance of this procedure.*

NOTE 3: *The Quality Inspection Plan shall be worked concurrently with t. procedure.*

NOTE 4 *Dunnage drums may be moved into and out of an SWB a. lirected by supervision.*

4.7.1 **JS: Record the serial numbers of the SWB to be loaded.**

#	SWB #
1	01024E

4.7.1.1 QI: Verify that the SWB recorded above are QL-1 SWBs.

(TSR)

QI signature: RE Justice Date 2-3-03

4.7.2 EO: Transfer the receiving SWB to the loading area, if required.

#	Initial/Date
1	RE / 2-3-03

4.7.3 JS: Identify and label each SWB using the approved Load Plan or CBFO-supplied shipping documents.

(WIPP)

#	Initial/Date
1	RE 2-3-03

4.7.4 M: If required, remove all the screws from the SWB lid.

#	Initial/Date
1	RE 2-3-03

13

4.7.5 M: IF needed,
THEN chase SWB lid eyebolt threads (using 1/4–20 UNC bottoming tap).

#	Initial/Date
1	[illegible] 2-3-03

4.7.6 OP/EO/SO: Lift lid, as necessary, from the SWB and set it down on blocks to prevent damage to the seal surface, as directed (this may be accomplished manually or using Lift Plan TP 157-06 [INEEL Form 433.34]).

(TSR)

#	Initial/Date
1	[illegible] 2-3-03

NOTE: *Step 4.7.7 may be performed at any time as directed by the JS.*

4.7.7 QI/SO: Perform an inspection of the SWB box and lid before loading for damage such as bulges, dents, or deterioration that would affect the integrity of the container.

(TSR)

#	Initial/Date
1	[illegible] 2-3-03

NOTE: *The filter's gasket may not contact the SWB when it is properly seated. The sealant acts as the seal in this application.*

4.7.8 M: Perform the following:

#	Initial/Date
1	[illegible] 2-3-03

4.7.8.1 Apply thread sealant to the filter body pipe threads and install at least two NF013 filters in each SWB.

(TSR)

4.7.8.2 Ensure pipe plugs have been coated with pipe thread sealant and installed into the threaded ports, as applicable.

(TSR)

4.7.8.3 Ensure all remaining holes/ports have been plugged.

(WIPP, TSR)

4.7.9 QI: **RECORD** torque wrench serial number and calibration due date.

Torque wrench serial number: 7,7685

Calibration due date: 2-20-03

QI signature: [signature] Date 2-3-03

4.7.10 M: Torque filters/plugs to 120 to 180 in.-lb or 10 to 15 ft-lb.

(TSR)

#	Initial/Date
1	JC 2-3-03

4.7.10.1 QI: Verify that filters/plugs are installed and torqued to specified value (120 to 180 in.-lb or 10 to 15 ft-lb.)

(TSR)

QI Signature [signature] Date 2-3-03 SWB # 010248

4.7.11 M/SO: Clean the gasket sealing surfaces of the box and lid, as appropriate.

(TSR)

#	Initial/Date
1	JC 2-3-03

NOTE: *The SWB body sealing surface and the adhesive side of the gasket will not be exposed for inspection once the gasket has been adhered to the sealing surface.*

QI HOLD

4.7.12 QI: Perform an inspection of the SWB body seal surface and adhesive side of the gasket.

(TSR)

QI Signature [signature] Date 2-3-03 SWB # 010248

4.7.13 QI: Inspect the SWB rivets for damaged threads and loose fit.

(TSR)

QI Signature RC Justice Date 2-3-03 SWB # 010248

NOTE: *Steps 4.7.14 and 4.7.15 may be performed concurrently or out of sequence as directed by the JS.*

4.7.14 M/SO: Place the adhesive side of the gasket down onto the sealing surface of the SWB body, ensuring the ends of the gasket interlock and maintaining alignment of the prepunched gasket holes.

(TSR)

#	Initial/Date
1	JK 2-3-03

4.7.15 QI: Inspect the remaining gasket sealing surfaces, the installed gasket condition, and ensure that the gasket is properly installed.

(TSR)

QI Signature RC Justice Date 02-03-03 SWB # 010248

4.7.16 OP: Ensure the drum-lifting adapter is rigged to one of the crane hooks or the overhead manipulator (O-Man) shoulder hook per Lift Plan TP 157-05 (INEEL Form 433.34).

(JSA)

#	Initial/Date
1	JK 2-3-03

NOTE: *The operator or JS will track each drum on a Manual Drum Tracking Form as required to maintain accountability.*

4.7.17 OP: Remove the designated drum from the SWB as directed by the JS.

#	Initial/Date
1	JK 2-3-03

4.7.18 RCT: Perform surveys on the drum as it is removed from the SWB.

(WIPP, JSA)

#	Initial/Date
1	MC 2-3-03

4.7.19 OP: Place the designated drum into the SWB per the Loading Plan or CBFO-supplied shipping documents.

#	Initial/Date
1	MC 2-3-03

4.7.20 SO/JS: Using a Manual Drum Tracking Form (see Appendix C), log each drum ID (IDRF #) as it is placed into another SWB.

#	Initial/Date
1	MC 2-3-03

4.7.21 QI: Verify that the drum is placed into the SWB in accordance with the Manual Drum Tracking Form.

#	Initial/Date
1	MC 2-3-03

4.7.22 WCO: Using the Loading Plan or CBFO-supplied shipping documents, ensure the placement of each drum as it is placed into the SWB.

#	Initial/Date
1	MC 2-3-03

Prepare SWB for Shipment

NOTE 1: *Alignment pins for the SWB lid may be used as necessary to align the lid.*

NOTE 2: Dunnage drums may be moved into and out of an SWB as directed by supervision.

4.7.23 SO: Ensure any dunnage drums have "EMPTY" labels.

#	Initial/Date
1	MC 2-3-03

4.7.24 SO: Ensure any dunnage drums have open vent ports (for each SWB).

(WIPP)

#	Initial/Date
1	LLL 2-3-03

4.7.25 SO/OP: Install dunnage drums into the appropriate SWBs per the Loading Plan or CBFO-supplied shipping documents.

#	Initial/Date		
1	LLL 2-3-03	2	LLL 2-3-03

4.7.26 JS: Sign and date the Loading Plan or CBFO-supplied shipping documents indicating that the SWB was assembled with the correct drums.

#	Initial/Date		
1	LLL 2-3-03	2	LLL 2-3-03

4.7.27 Install SWB lid on loaded SWB as follows:

4.7.27.1 EO/SO/OP: Lift the lid above the packaging and center the lid so that the lid is positioned over the body shell flange (this may be accomplished manually or using Lift Plan TP 157-06 [INEEL Form 433.34]).

#	Initial/Date
1	LLL 2-3-03

WARNING

Pinch points are present between lid and body shell flange. Fingers must be kept clear.

(JSA)

17

4.7.27.2 EO/SO/OP: Lower the lid slowly onto the body shell flange, ensuring the gasket is not damaged and the lid and body serial numbers are together.

(TSR)

#	Initial/Date
1	[illegible] 2-3-03

NOTE 1: *When installing the screws, a lineup bar may be used to pull the lid into position with the body. Caution will be needed to prevent damage to the male/female threads with the lineup bar.*

NOTE 2: *A thread sealer (Locktite #565 or equivalent) is used on the SWB screws.*

(TSR)

NOTE 3: *Use of air or electric wrenches to quickly seat the screws is allowable. However, care should be taken to seat the screws only hand-tight and not to apply excessive torque.*

4.7.27.3 QI: RECORD torque wrench serial number and calibration due date.

Torque wrench serial number: 716785

Calibration due date: 2-2003

QI signature: [signature] Date 2-3-03

4.7.27.4 M: Install four corner screws approximately ¼-in. or 3 to 4 turns.

(TSR)

#	Initial/Date
1	[illegible] 2-3-03

4.7.27.5 M: Install four screws (in the middle of straight sides and the middle of the curved ends).

(TSR)

#	Initial/Date
1	[illegible] 2-3-03

4.7.27.6 M: Using a template, install and tighten all screws 360 to 480 in.-lb or 30 to 40 ft-lb.

(TSR)

#	Initial/Date
1	MK 2-3-03

4.7.27.7 M: Using a template, tighten all screws 600 to 720 in.-lb or 50 to 60 ft-lb.

(TSR)

#	Initial/Date
1	MK 2-3-03

4.7.27.7.1 QI: Verify that screws are torqued to the specified value.

(TSR)

QI Signature RO Justice Date 2-3-03 SWB # 010248

4.7.27.8 EO/M: If required, remove lid lift rigging and eyebolt and stage as directed.

#	Initial/Date
1	MK 2-3-03

4.7.28 RCT: Survey the SWB for contamination as it is removed from the Hot Shop.

(WIPP, JSA)

#	Initial/Date
1	MK 2-3-03

4.7.29 EO: Place the SWB(s) in designated area as directed.

#	Initial/Date
1	MK 2-3-03

4.7.30 SO: GO TO Appendix D and perform the container integrity inspection.

#	Initial/Date
1	JLL 2-3-03

4.7.31 RCT: Perform contamination survey and beta-gamma and neutron radiation surveys at contact, 1 m, and 2 m for each SWB; ensure contamination levels are less than or equal to 20 dpm/100 cm^2 alpha, and 200 dpm/100 cm^2 beta-gamma for transportation.

(WIPP, JSA)

#	Initial/Date
1	JLL 2-3-03

4.7.32 RCT: IF not already labeled,
THEN label SWB "Caution Radioactive Material" in a clearly visible location as required.

#	Initial/Date
1	JLL 2-3-03

4.7.33 SO: Apply hazardous/non-hazardous labels to SWB as required.

(WIPP)

#	Initial/Date
1	JLL 2-3-03

4.7.34 HEO/EO: Lift the packaging into position on the conveyance vehicle.

#	Initial/Date
1	JLL 2-3-03

4.7.35 HEO/EO: Install wood or other material to prevent longitudinal or lateral movement of the packaging.

#	Initial/Date
1	JLL 2-3-03

NOTE: *The rigging must be anchored to the packaging by the lift clips at the top edge of the packaging.*

4.7.36 HEO/EO: Secure the packaging to the vehicle with webbing or other suitable rigging per 49 CFR 393, Subpart I requirements.

#	Initial/Date
1	[illegible] 2-3-03

4.7.37 HEO/EO: Verify that all rigging and equipment is secure before shipment.

#	Initial/Date
1	[illegible] 2-3-03

[illegible] 2-3-03

4.7.38 WCO: Complete INEEL Form 461.02, "Radioactive Material Packaging Quality Control Inspection," for each SWB.

Michael [illegible] 2/3/2003 SWB: IORFXWB030007

TRUPACT-157 PAYLOAD DISASSEMBLY OPERATIONS AT TAN	Identifier: TPR-6233 Revision: 1 Page: 1 of 38

Applicability: Test Area North	Type: Technical Procedure	For Additional Info: http://EDMS	Effective Date: 01/22/03

Manual: Detailed Operating Procedures for Test Area North Operations **USE TYPE 1** Change Number: 98036

PROCEDURE REVIEW REQUIREMENTS					
DISCIPLINE	REVISION	CHANGE	DISCIPLINE	REVISION	CHANGE
TAN/RWMC OPERATIONS	X	X	TAN INDUSTRIAL SAFETY	X	A/R
MAINTENANCE	X	A/R	TAN QUALITY	X	X
LANDLORD	N/A	N/A	TAN ENVIRONMENTAL	N/A	N/A
TAN SYSTEM ENGINEER	X	X	TAN RADCON	X	A/R
RWMC SYSTEM ENGINEER	X	X	TAN INDUSTRIAL HYGIENE	X	A/R
TAN SAFETY ANALYSIS	X	A/R	EMERGENCY PLANNER	N/A	N/A
TRAINING	N/A	N/A	SAFEGUARDS (NMC)	N/A	N/A
SITE QUALITY ASSURANCE OFFICER (SQAO)	X	A/R	TAN CRITICALITY ENGINEER	N/A	N/A
TAN FIRE PROTECTION ENGINEER	N/A	N/A	PACKAGING AND TRANSPORTATION	X	A/R

CONTENTS

1. INTRODUCTION

1.1 Purpose

To provide instructions for the disassembly of the TRUPACT-157 payload.

1.2 Scope and Applicability

This procedure applies to personnel performing TRUPACT-II Payload disassembly operations. This procedure will provide guidance for the disassembly and temporary disposition of the TRUPACT-157 payload.

2. PRECAUTIONS AND LIMITATIONS

2.1 When handling TRU drums, every effort must be made to ensure continued container integrity.

2.2 The Adjustable Center of Gravity Lifting Fixture (ACGLF) is designed to handle the weight of an Outer Containment Vessel (OCV) lid, an Inner Containment Vessel (ICV) lid, an empty ICV assembly, or a payload. Payloads include 14-pack or dummy drums. The ACGLF is not designed to handle the weight of a TRUPACT-II container (loaded or empty), a loaded Outer Containment Assembly (OCA) or a loaded ICV.

(WIPP)

2.3 The ACGLF with short legs may be set directly on the floor and disconnected from the crane. The ACGLF with long legs can be set on the floor but should have minimal vertical support from the crane to prevent tipping.

2.4 Personnel performing this procedure must wear safety shoes.

(JSA)

2.5 The lifts in this procedure are critical lifts, pre-engineered production lifts, or ordinary lifts per DOE-STD-1090-2001, DOE Hoisting and Rigging Standard.

(JSA)

2.6 IF fossil-fueled vehicles are operating continuously, without the ventilation hoses attached, for more than approximately 10 minutes inside the building, THEN a carbon monoxide monitor must be obtained from Industrial Hygiene (IH) for use.

(JSA)

2.7 Do not place body parts under a suspended load with the following exceptions: ACGLF adjustments/leg changes and guiding leg insertion.

(JSA)

2.8 Heat stress stay time must be monitored. Heat stress stay times vary depending upon environmental conditions, work activities, and PPE, and must be initially determined and re-evaluated as conditions change per MCP-9240, "Managing Heat and Cold Stress at TAN."

(JSA)

2.9 During ACGLF operation, non-essential personnel must stay clear of the ACGLF.

(JSA)

2.10 Procedure steps or sections may be performed out-of-sequence as directed. The Technical Lead (TL)/Shift Supervisor (SS) marks the steps or sections to be performed out-of-sequence with a "go to _____" and records the justification for no adverse impact on the conduct of the procedure in Appendix B, Comment Sheet. After the last out-of-sequence step, the TL/SS marks "return to Step _____".

2.11 Procedure steps or sections may be re-performed as directed by the TL/SS. The TL/SS mark the step(s)/section(s) to be re-performed with "step(s)/section(s) _____ are to be re-performed and resigned", and enters the number of the step(s)/section(s) to be re-performed in the blank and records the justification for no adverse impact on the conduct of the procedure entered in Appendix B, Comment Sheet.

2.12 Procedure steps or sections may be marked N/A as follows:

2.12.1 Non-conditional steps or sections that contain technical safety requirements (TSR) or safety analysis report (SAR) commitments require a Document Action Request (DAR) to mark the step or section N/A.

2.12.2 Non-conditional steps or sections NOT involving TSR and SAR commitments may be marked N/A, initialed and dated by the TL/SS, and a written justification entered in Appendix B, Comment Sheet.

2.12.3 Conditional steps or sections must be marked N/A and initialed/dated by the person performing the procedure if the conditions stated by the procedure exist.

2.13 Procedure steps or sections may be signed or initialed by the Job Supervisor (JS), TL/SS, or Person in Charge (PIC) based on personal observation, direct report from the performer, or review of controlled records.

2.14 Any problems during procedure performance must be entered into Appendix B. Any documents (NCRs, WOs, DRs, etc.) issued to close, track, or resolve comments must be identified in Appendix B.

3. PREREQUISITES

3.1 Planning and Coordination

NOTE: *The following is a recommended crew (minimum). Manning may be adjusted as required by the TL/SS.*

☑ 3.1.1 TL/SS: As a minimum, ensure the following personnel are available:

A. Job Supervisor (JS) (continuously present at the job site)

B. SWEPP Operator (SO)

C. Mechanic (M)

D. Radiological Control Technician (RCT)

E. Equipment Operator (EO)

F. Heavy Equipment Operator (HEO)

G. Quality Inspector (QI)

H. Technical Lead (TL)/Shift Supervisor (SS)

I. TAN Operator (OP)

J. Waste Certification Official (WCO)

K. Carpenter (C).

☑ 3.1.2 JS: Conduct a pre-job briefing with personnel conducting this procedure in accordance with MCP-3003, "Performing Pre-Job Briefings and Post-Job Reviews" including TAN-JSA-6233.

(JSA)

3.1.3 SS/TL authorize work:

SS/TL 1/28/03 Date

3.1.4 A current Radiological Work Permit is required.

(JSA)

3.2 Performance Documents

INTEC-QA-0221, Quality Inspection of TRUPACT-157 Payload Disassembly Operations at Test Area North (TAN)

PLN-1169, TRUPACT-II Shipping Container 157 Payload Examination Plan

INEEL Form 433.34, INEEL Lift Plan

INEEL Form 433.34A, INEEL Lift Plan Supplement

INEEL Form 461.02, Radioactive Material Packaging Quality Control Inspection

Carlsbad Field Office (CBFO)-supplied shipping documents

3.3 Special Tools, Equipment, Parts, and Supplies

NOTE: *The following materials and equipment are recommended.*

Item	No.	Comments
HS Crane: CRN-HS-902 110/10	1	Annual maintenance completed 3/8/02; due 3/8/03
Oman: OMAN-SP-901	1	Annual maintenance completed 2/30/02; due 2/30/03
Thread lubricant (Locktite #565 or equivalent)	A/R	For standard waste box (SWB) lid screw thread lubrication
Alpha and Beta-gamma CAMs	1	As required by ALARA review and RWP
RAMs	1	As required by ALARA review and RWP. RAM 3, C Pedestal PM completed 7/30/02
SWB gasket	6	Supplied with (inside) the SWB from vendor

Item	No.	Comments
Torque wrench (0–75 ft-lb range)	1	For SWB lid installation
Torque wrench (0–25 ft-lb range)	1	For filter/plug installation
Powered driver with socket adapter and/or hexagon wrench	1	Required for SWB screws
Standard Waste Boxes (SWB)	6	QL-1 required. Each box will have a unique number identifier. **(TSR)**
SWB alignment pins	A/R	For aligning SWB lid
Dunnage drums	10	Required to complete payload in select SWBs
Video recorder equipment and video tapes	A/R	As needed monitor progress, perform inspections, etc.
Rigging per applicable Lift Plan (INEEL Form 433.34)	A/R	Lift Plan numbers: TP 157-03, Payload Handling
Razor knife	1	Required for cutting plastic sleeving
ACGLF with control console	1	Required for lifting lids and payload
Spill pallets	A/R	Required for staging drums
Drum handler (crane)	1	Required for disassembling payload
Smear extension tool	1	Required for surveying cask and internals
Torque template	1	Required for SWB torque sequence
Drum bags	14	Required for transport of drums to SWBs
Forklift	1	Required for moving SWBs
Decontamination fixative	A/R	ET Glycerin Solution (ETGS), MSDS 20625, required for certain decontamination activities

3.4 Field Preparations

3.4.1 The required alpha and beta-gamma CAMs are operating as required by RadCon.

(JSA)

3.4.2 Ensure the ACGLF legs are covered with plastic or tape to minimize the need to decontaminate them later as required by RadCon.

3.4.3 JS: Record the serial numbers of the six SWBs to be loaded.

#	SWB #	#	SWB#	#	SWB #
1	010263	2	010221	3	010259
4	010227	5	010288	6	010282

3.4.3.1 QI: Verify that the six SWBs recorded above are QL-1 SWBs.

(TSR)

QI signature: RC Justice Date 1-28-03

4. INSTRUCTIONS

NOTE 1: *Procedure steps or sections may be signed off or initialed by the TL/SS, JS, or Performer based on personal observation, direct report from the performer, or review of controlled records.*

NOTE 2: *The Payload Examination Plan (PLN-1169) may be worked at any time during the performance of this procedure at the direction of the TL/JS/SS.*

NOTE 3: *Procedure steps, sections, and steps within a section may be performed concurrently as directed by the TL/SS.*

NOTE 4: *All radiological surveys will be documented in accordance with MCP-139, "Radiological Surveys."*

NOTE 5: *Quality Inspection Plan, INTEC-QA-0221, must be performed in conjunction with this procedure.*

4.1 General

RC 1/28/03
RC 1-28-03 4.1.1 JS: Ensure applicable prerequisites have been met.

4.1.2 GO TO the appropriate procedure section from the following table based on the desired task to be performed,
THEN RETURN TO this step.

Task	Section to Perform
Moving the Payload Assembly	Section 4.2
Stage SWB for Loading	Section 4.3
Disassembly of a 14-Pack Payload	Section 4.4
Prepare SWB for Shipment	Section 4.5
Post-Performance Activities	Section 4.6 and EXIT this procedure.
Moving A Drum from One SWB to another SWB	Section 4.7

SEE FC 98552 DAR 1/28/03

4.2 Moving the Payload Assembly

1/28/03 4.2.1 TL: Designate a PIC prior to hoisting activities for CRITICAL LIFTS in Section 4.2.

PIC: Kelly Kynaston

1/28/03 4.2.2 EO/OP: Rig the ACGLF to the overhead crane and connect to the 14-pack assembly per Lift Plan TP 157-03 (INEEL Form 433.34).
LL 1-28-03

(JSA)

4.2.2.1 PIC: Ensure that INEEL Form 433.34A, "INEEL Lift Plan Supplement," has been completed and verified for this CRITICAL LIFT.

PIC: Kelly Kynaston

(JSA)

NOTE: *Red marks (bands) on the lifting legs indicate that the long lifting legs are fully inserted into the guide tubes. They may reappear as the load is lifted.*

1/28/03 4.2.2.2 EO: If necessary, visually ensure all three legs are engaged and locked.
NA LL 1-28-03

CAUTION

Movement of the ACGLF counter weights must not occur with the free load above approximately 6 in.

NA 1-28-03 1/29/03

4.2.2.3 Heavy Equipment Operator (HEO)/OP: If necessary, using the crane, lift the payload approximately 2 to 6 in. above the floor, as applicable.

NA 1-28-03 1/28/03

4.2.2.4 EO: If necessary, adjust the counterweights to compensate for the center-of-gravity of the payload.

4.2.2.5 Remove the bottom section of the containment as required by the JS by performing the following:

RCT HOLD

1-28-03

4.2.2.5.1 JS/RCT: Ensure that the tent ventilation system is functioning properly.

(JSA)

RCT HOLD

1-28-03

4.2.2.5.2 JS/RCT: Ensure that the daily tent inspection has been performed.

1-28-03

4.2.2.5.3 JS: Ensure side tent openings are closed.

1-28-03

4.2.2.5.4 RCT: Ensure negative airflow into the top of the tent.

1-28-03

4.2.2.5.5 SO/OP: Remove the bottom section of the containment from the payload.

1-28-03

4.2.2.6 HEO/OP: Place the payload in a storage location, as designated by the JS.

1-28-03

4.2.2.7 HEO: After setting down and stabilizing the payload assembly, position the weights on the ACGLF at 180 and 000 degrees before unlatching the ACGLF from the 14-pack assembly.

1-28-03 4.2.2.8 OP: Remove ACGLF from the payload.

1-28-03 4.2.2.9 SO/OP: Remove the top section of the containment from the payload as required by the JS.

1-28-03 1-28-03 4.2.2.10 C/OP: Close the roof lid on the tent.

STOPPED NOISE 1457

STARTED NOISE 1457 1-28-03

SEE COMMENTS SHEET 1/30/03

4.3 Stage SWB for Loading

NOTE 1: *SWBs may be changed out at any time during the performance of this procedure.*

NOTE 2: *The Quality Inspection Plan must be worked concurrently with this procedure.*

4.3.1 EO: Transfer the SWB to the loading area, if required.

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	1-29-03	2	1-29-03	3	1-29-03	4	1-29-03
5	1-29-03	6	1-29-03				

4.3.2 JS: Identify and label each SWB using the CBFO-supplied shipping documents.

(WIPP)

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	1-29-03	2	1-29-03	3	1-29-03	4	1-29-03
5	1-29-03	6	1-29-03	7	2-3-03		

4.3.3 M: If required, remove all the screws from the SWB lid.

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	1-29-03	2	1-29-03	3	1-29-03	4	1-29-03
5	1-29-03	6	1-29-03				

4.3.4 ~~M: IF~~ needed, ~~THEN~~ chase SWB lid eyebolt threads (using 1/4–20 UNC bottoming tap).

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	NA 1-29-03	2	NA 1-29-03	3	NA 1-29-03	4	NA 1-29-03
5	NA 1-29-03	6	NA 1-29-03				

4.3.5 OP/EO/SO: Lift lid, as necessary, from the SWB and set it down on blocks to prevent damage to the seal surface, as directed (this may be accomplished manually or using Lift Plan TP 157-06 [INEEL Form 433.34]).

(TSR)

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	1-29-03	2	1-29-03	3	1-29-03	4	1-29-03
5	1-29-03	6	1-29-03				

NOTE: *Step 4.3.6 may be performed at any time as directed by the JS.*

4.3.6 QI/SO: Perform an inspection of the SWB box and lid before loading for damage such as bulges, dents, or deterioration that would affect the integrity of the container.

(TSR)

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	1-29-03	2	1-29-03	3	1-29-03	4	1-29-03
5	1-29-03	6	1-29-03				

NOTE: *The filter's gasket may not contact the SWB when it is properly seated. The sealant acts as the seal in this application.*

4.3.7 M: Perform the following:

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	MC 1-29-03	2	MC 1-29-03	3	MC 1-29-03	4	MC 1-29-03
5	MC 1-29-03	6	MC 1-29-03				

✓4.3.7.1 Apply thread sealant to the filter body pipe threads and install four NF013 filters in each SWB.

(TSR)

✓4.3.7.2 Ensure pipe plugs have been coated with pipe thread sealant and installed into the threaded ports, as applicable.

(TSR)

✓4.3.7.3 Ensure all remaining holes/ports have been plugged.

(WIPP, TSR)

4.3.8 QI: **RECORD** torque wrench serial number and calibration due date.

Torque wrench serial number: 704213

Calibration due date: 2-27-03

QI signature: RC Justice Date 1-29-03

4.3.9 M: Torque filters/plugs to 120 to 180 in.-lb or 10 to 15 ft-lb.

(TSR)

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	MC 1-29-03	2	MC 1-29-03	3	MC 1-29-03	4	MC 1-29-03
5	MC 1-29-03	6	MC 1-29-03				

4.3.9.1 QI: Verify that filters/plugs are installed and torqued to specified value (120 to 180 in.-lb or 10 to 15 ft-lb.

(TSR)

QI Signature RC Justice Date 1-29-03 SWB # 010282

QI Signature RC Justice Date 1-29-03 SWB # 010259

QI Signature RC Justice Date 1-29-03 SWB # 010221

QI Signature RC Justice Date 1-29-03 SWB # 010227

QI Signature RC Justice Date 1-29-03 SWB # 010288

QI Signature RC Justice Date 1-29-03 SWB # 010263

4.3.10 M/SO: Clean the gasket sealing surfaces of the box and lid, as appropriate.

SEE COMMENT APPENDIX B FOR STEPS 4.3.10 4.3.11 4.3.13 & 4.3.14

(TSR)

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	MC 1-29-03	2	MC 1-29-03	3	MC 1-29-03	4	MC 1-29-03
5	MC 1-29-03	6	MC 1-29-03				

RC Justice 1-31-03

(7) MC 1-31-03

(8) MC 1-31-03

NOTE: *The SWB body sealing surface and the adhesive side of the gasket will not be exposed for inspection once the gasket has been adhered to the sealing surface.*

QI HOLD

4.3.11 QI: Perform an inspection of the SWB body seal surface and adhesive side of the gasket.

(TSR)

QI Signature RC Justice Date 1-29-03 SWB # 010282
QI Signature RC Justice *RC Justice 1-31-03 Date 1-29-03 SWB # 010259
QI Signature RC Justice Date 1-29-03 SWB # 010221
QI Signature RC Justice Date 1-29-03 SWB # 010227
QI Signature RC Justice *RC Justice 1-31-03 Date 1-29-03 SWB # 010288
QI Signature RC Justice Date 1-29-03 SWB # 010263

4.3.12 QI: Inspect the SWB rivets for damaged threads and loose fit.

(TSR)

QI Signature RC Justice Date 1-29-03 SWB # 010282
QI Signature RC Justice Date 1-29-03 SWB # 010259
QI Signature RC Justice Date 1-29-03 SWB # 010221
QI Signature RC Justice Date 1-29-03 SWB # 010227
QI Signature RC Justice Date 1-29-03 SWB # 010288
QI Signature RC Justice Date 1-29-03 SWB # 010263

* steps reperformed to replace damaged gasket section.
RCJ
1-31-03

NOTE: *Steps 4.3.13 and 4.3.14 may be performed concurrently or out of sequence as directed by the JS.*

4.3.13 M/SO: Place the adhesive side of the gasket down onto the sealing surface of the SWB body, ensuring the ends of the gasket interlock and maintaining alignment of the prepunched gasket holes.

(TSR)

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	KL 1-29-03	2	KL 1-29-03	3	KL 1-29-03	4	KL 1-29-03
5	KL 1-29-03	6	KL 1-29-03				

(1) KL 1-31-03 (5) KL 1-31-03

4.3.14 QI: Inspect the remaining gasket sealing surfaces, the installed gasket condition, and ensure that the gasket is properly installed.

(TSR)

QI Signature [signature] Date 1-29-03 SWB # 010282

QI Signature [signature] / [signature]* 1-31-03 Date 1-29-03 SWB # 010259

QI Signature [signature] Date 1-29-03 SWB # 010221

QI Signature [signature] Date 1-29-03 SWB # 010227

QI Signature [signature] / [signature]* 1-31-03 Date 1-29-03 SWB # 010288

QI Signature [signature] Date 1-29-03 SWB # 010263

4.4 Disassembly of a 14-Pack Payload

NOTE: *The disassembly of the payload will be directed by the JS with RCT assistance.*

Reperform — see comment sheet for repeat explanation [initials] 1/30/03 Reperform

RCT HOLD Started [illegible] testing 1-30-03

KL 1-29-03 / KL 1-30-03 4.4.1 JS: Ensure that the tent ventilation system is functioning properly.

(JSA)

RCT HOLD

KL 1-29-03 / KL 1-30-03 4.4.2 JS: Ensure that the daily tent inspection has been performed.

* Steps reperformed to replace damaged gasket section, RCJ 1-31-03

MC 1-29-03 4.4.3 RCT/SO/OP: Perform inspections and surveys on the payload assembly per the Payload Examination Plan as required.

NOTE: *The disassembly of the payload may be performed from inside the containment tent or from outside of the tent based on survey results, RWP requirements, and RadCon direction*

(JSA)

MC 1-29-03 4.4.4 SO/OP/RCT: If necessary, with RadCon concurrence, remove the containment from around the payload.

(JSA)

MC 1-29-03 4.4.5 SO/OP/RCT: Perform surveys and inspections of the payload per the Payload Examination Plan as required.

MC 1-29-03 4.4.6 SO/OP: Remove stretch-wrap material from the upper layer of the payload assembly.

MC 1-29-03 4.4.7 SO/OP: Remove the upper slip sheet from the payload assembly.

MC 1-29-03 4.4.8 SO: Remove guide tubes as required to facilitate payload disassembly.

NOTE 1: *Each drum will be inspected and video taped as it is removed from the payload per the Payload Examination Plan.*

NOTE 2: *Steps 4.4.9 through 4.4.17 may be performed concurrently.*

4.4.9 OP: Ensure the drum-lifting adapter is rigged to one of the crane hooks or the overhead manipulator (O-Man) shoulder hook per Lift Plan TP 157-05 (INEEL Form 433.34).

(JSA)

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	MC 1-29-03	2	MC 1-29-03	3	MC 1-29-03	4	MC 1-29-03
5	MC 1-30-03	6	MC 1-30-03	7	MC 1-30-03		

NOTE: *The operator or JS will track each drum on a Manual Drum Tracking Form as required to maintain accountability.*

4.4.10 OP: Remove each drum from the upper portion of the payload as directed by the JS.

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	ICL 1-29-03	2	ICL 1-29-03	3	ICL 1-29-03	4	ICL 1-29-03
5	ICL 1-30-03	6	ICL 1-30-03	7	ICL 1-30-03		

4.4.11 RCT: Perform surveys on each drum as it is removed from the payload per the Payload Examination Plan if required.

(WIPP, JSA)

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	ICL 1-29-03	2	ICL 1-29-03	3	ICL 1-29-03	4	ICL 1-29-03
5	ICL 1-30-03	6	ICL 1-30-03	7	ICL 1-30-03		

RCT HOLD

4.4.11.1 OP/RCT: IF contamination survey of the top of the drum is greater than 1000 dpm/100 cm^2 alpha,
THEN decontaminate or apply fixative per RadCon direction.

SOS COMMENT SHEET for Position #7 @ 1/30/03

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	NA ICL 1-29-03	2	NA ICL 1-29-03	3	NA ICL 1-29-03	4	NA ICL 1-29-03
5	NA ICL 1-30-03	6	NA ICL 1-30-03	7	NA @ 1/30/03		

4.4.12 OP: Place each drum in a poly bag, if directed by JS/RCT.

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	NA ICL 1-29-03	2	NA ICL 1-29-03	3	NA ICL 1-29-03	4	NA ICL 1-29-03
5	NA ICL 1-30-03	6	NA ICL 1-30-03	7	ICL 1-30-03		

4.4.13 OP: Ensure the drum-lifting adapter is rigged to one of the crane hooks or the overhead manipulator (O-Man) shoulder hook per Lift Plan TP 157-05 (INEEL Form 433.34).

(JSA)

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	ICL 1-29-03	2	ICL 1-29-03	3	ICL 1-29-03	4	ICL 1-29-03
5	ICL 1-30-03	6	ICL 1-30-03	7	ICL 1-30-03		

4.4.14 OP: Place each drum into the SWB per the CBFO-supplied shipping documents.

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	MC 1-29-03	2	MC 1-29-03	3	MC 1-29-03	4	MC 1-29-03
5	MC 1-30-03	6	MC 1-30-03	7	MC 1-30-03		

4.4.15 SO/JS: Using a Manual Drum Tracking Form (see Appendix C), log each drum ID (IDRF #) as it is placed into the SWB.

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	MC 1-29-03	2	MC 1-29-03	3	MC 1-29-03	4	MC 1-29-03
5	MC 1-30-03	6	MC 1-30-03	7	MC 1-30-03		

4.4.16 QI: Verify that each drum is placed into the SWB in accordance with the Manual Drum Tracking Form.

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	MC 1-29-03	2	MC 1-29-03	3	MC 1-29-03	4	MC 1-29-03
5	MC 1-30-03	6	MC 1-30-03	7	MC 1-30-03		

4.4.17 WCO: Using the CBFO-supplied shipping documents, ensure the placement of each drum as it is placed into the SWB.

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	MC 1-29-03	2	MC 1-29-03	3	MC 1-29-03	4	MC 1-29-03
5	MC 1-30-03	6	MC 1-30-03	7	MC 1-30-03		

STOPPED HERE 1-29-03 3:27 PM

4.4.18 Repeat Steps 4.4.9 through 4.4.17 for each drum to be removed from the upper level.

MC 1-30-03 4.4.19 SO/OP: Remove the TRUPACT-II slip-sheet from the top of the bottom layer of drums.

MC 1-30-03 4.4.20 SO/OP: Remove remaining stretch wrap material.

MC 1-30-03 4.4.21 SO/OP: Remove the lower slip sheet from the payload assembly.

NOTE: *Steps 4.4.22 through 4.4.30 may be performed concurrently.*

4.4.22 OP: Ensure the drum-lifting adapter is rigged to one of the crane hooks or the overhead manipulator (O-Man) shoulder hook per Lift Plan TP 157-05 (INEEL Form 433.34).

(JSA)

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	KLL 1-30-03	2	KLL 1-30-03	3	KLL 1-30-03	4	KLL 1-30-03
5	KLL 1-30-03	6	KLL 1-30-03	7	KLL 1-30-03		

4.4.23 OP: Remove each drum from the lower portion of the payload as directed by the JS.

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	KLL 1-30-03	2	KLL 1-30-03	3	KLL 1-30-03	4	KLL 1-30-03
5	KLL 1-30-03	6	KLL 1-30-03	7	KLL 1-30-03		

4.4.24 RCT: Perform surveys on each drum as it is removed from the payload per the Payload Examination Plan if required.

(WIPP, JSA)

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	KLL 1-30-03	2	KLL 1-30-03	3	KLL 1-30-03	4	KLL 1-30-03
5	KLL 1-30-03	6	KLL 1-30-03	7	KLL 1-30-03		

RCT HOLD

4.4.24.1 OP/RCT: IF contamination survey of the top of the drum is greater than 1000 dpm/100 cm^2 alpha,
THEN decontaminate or apply fixative per RadCon direction.

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	NAKLL 1-30-03	2	NAKLL 1-30-03	3	NAKLL 1-30-03	4	NAKLL 1-30-03
5	NAKLL 1-30-03	6	NAKLL 1-30-03	7	NAKLL 1-30-03		

4.4.25 OP: Place each drum in a poly bag, if directed by JS/RCT.

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	NAKLL 1-30-03	2	NAKLL 1-30-03	3	NAKLL 1-30-03	4	NAKLL 1-30-03
5	NAKLL 1-30-03	6	NAKLL 1-30-03	7	NAKLL 1-30-03		

4.4.26 OP: Ensure the drum-lifting adapter is rigged to one of the crane hooks or the overhead manipulator (O-Man) shoulder hook per Lift Plan TP 157-05 (INEEL Form 433.34).

(JSA)

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	MC 1-30-03	2	MC 1-30-03	3	MC 1-30-03	4	MC 1-30-03
5	MC 1-30-03	6	MC 1-30-03	7	MC 1-30-03		

4.4.27 OP: Place each drum into the SWB per the CBFO-supplied shipping documents.

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	MC 1-30-03	2	MC 1-30-03	3	MC 1-30-03	4	MC 1-30-03
5	MC 1-30-03	6	MC 1-30-03	7	MC 1-30-03		

4.4.28 SO/JS: Using a Manual Drum Tracking Form, enter each drum ID (IDRF #) as it is placed into the SWB.

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	MC 1-30-03	2	MC 1-30-03	3	MC 1-30-03	4	MC 1-30-03
5	MC 1-30-03	6	MC 1-30-03	7	MC 1-30-03		

4.4.29 QI: Verify that each drum is placed into the SWB in accordance with the Manual Drum Tracking Form.

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	MC 1-30-03	2	MC 1-30-03	3	MC 1-30-03	4	MC 1-30-03
5	MC 1-30-03	6	MC 1-30-03	7	MC 1-30-03		

4.4.30 WCO: Using the CBFO-supplied shipping documents, ensure the placement of each drum as it is placed into the SWB.

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	MC 1-30-03	2	MC 1-30-03	3	MC 1-30-03	4	MC 1-30-03
5	MC 1-30-03	6	MC 1-30-03	7	MC 1-30-03		

STOP DUE TO RAIN 1-30-03
STARTED MOVE 1-31-03
WALK 1-31-03

4.4.31 Repeat Steps 4.4.22 through 4.4.30 for each drum to be removed from the lower level.

4.4.32 SO/OP/RCT: Perform any additional inspections and surveys per the Payload Examination Plan.

4.5 Prepare SWB for Shipment

NOTE: *Alignment pins for the SWB lid may be used as necessary to align the lid.*

4.5.1 SO: Ensure any dunnage drums have "EMPTY" labels.

See Comment Sheet for steps 4.5.1 – 4.5.3 2/3/03

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	NA 1-31-03	2	1-31-03	3	NA 1-31-03	4	1-31-03
5	1-31-03	6	1-31-03				

4.5.2 SO: Ensure any dunnage drums have open vent ports.

(WIPP)

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	NA 1-31-03	2	1-31-03	3	NA 1-31-03	4	1-31-03
5	1-31-03	6	1-31-03				

See Comment Sheet 1/31/03

4.5.3 SO/OP: Install dunnage drums into the appropriate SWBs per the CBFO-supplied shipping documents.

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	NA 1-31-03	2	1-31-03	3	NA 1-31-03	4	1-31-03
5	1-31-03	6	1-31-03				

1-31-03

4.5.4 JS: Sign and date the CBFO-supplied shipping documents indicating that the SWB was assembled with the correct drums.

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	1-31-03	2	1-31-03	3	1-31-03	4	1-31-03
5	1-31-03	6	1-31-03				

4.5.5 Install SWB lid on loaded SWB as follows:

RCT HOLD

See Comment Sheet for Appendix B steps 4.5.5.1 and 4.5.5.2

4.5.5.1 RCT: Ensure the top of the drum below the area where the hole will be created has been decontaminated to less than 1000 dpm/100 cm^2 alpha or has fixative applied.

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	NA ICC 1-31-03	2	NA ICC 1-31-03	3	NA ICC 1-31-03	4	NA ICC 1-31-03
5	NA ICC 1-31-03	6	NA ICC 2-3-03				

RCT HOLD

See Comment Sheet as above 2/3/03

4.5.5.2 RCT: Ensure local HEPA-filtered ventilation has been provided to direct airflow away from personnel performing venting operations.

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	NA ICC 1-31-03	2	NA ICC 1-31-03	3	NA ICC 1-31-03	4	NA ICC 1-31-03
5	NA ICC 1-31-03	6	NA ICC 2-3-03				

CAUTION

Care should be taken to avoid damaging the drum vent filter when creating the vent hole for the bagged drums.

RCT HOLD

4.5.5.3 RCT/SO/OP: For each bagged drum in the SWB, apply fixative, create a 2-in.-minimum vent hole through the plastic sleeve, and apply fixative as directed by the JS/RCT.

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	NA ICC 1-31-03	2	NA ICC 1-31-03	3	NA ICC 1-31-03	4	NA ICC 1-31-03
5	NA ICC 1-31-03	6	NA ICC 2-3-03				

NOTE: *The following step may be N/A'd for any SWBs that have no bagged drums.*

4.5.5.4 QI: Ensure each bagged drum in the SWB has a 2-in.-minimum vent hole.

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	KL NA 1-31-03	2	NA KL 1-31-03	3	NA KL 1-31-03	4	NA KL 1-31-03
5	NA KL 1-31-03	6	NA KL 2-3-03				

4.5.5.5 EO/SO/OP: Lift the lid above the packaging and center the lid so that the lid is positioned over the body shell flange (this may be accomplished manually or using Lift Plan TP 157-06 [INEEL Form 433.34]).

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	KL 1-31-03	2	KL 1-31-03	3	KL 1-31-03	4	KL 1-31-03
5	KL 1-31-03	6	KL 2-3-03				

WARNING

Pinch points are present between lid and body shell flange. Fingers must be kept clear.

(JSA)

4.5.5.6 EO/SO/OP: Lower the lid slowly onto the body shell flange, ensuring the gasket is not damaged and the lid and body serial numbers are together.

(TSR)

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	KL 1-31-03	2	KL 1-31-03	3	KL 1-31-03	4	KL 1-31-03
5	KL 1-31-03	6	KL 2-3-03				

415

NOTE 1: *When installing the screws, a lineup bar may be used to pull the lid into position with the body. Caution will be needed to prevent damage to the male/female threads with the lineup bar.*

NOTE 2: *A thread sealer (Locktite #565 or equivalent) is used on the SWB screws.*

(TSR)

NOTE 3: *Use of air or electric wrenches to quickly seat the screws is allowable. However, care should be taken to seat the screws only hand-tight and not to apply excessive torque.*

4.5.5.7 QI: RECORD torque wrench serial number and calibration due date.

Torque wrench serial number: 704213 / 718305 / 716785

Calibration due date: 2-27-03 / 2-7-03 / 2-20-03

QI signature: RC Justice Date 1-31-03
RC Justice 2-3-03

4.5.5.8 M: Install four corner screws approximately ¼-in. or 3 to 4 turns.

(TSR)

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	MC 1-31-03	2	MC 1-31-03	3	MC 1-31-03	4	MC 1-31-03
5	MC 1-31-03	6	MC 2-3-03				

4.5.5.9 M: Install four screws (in the middle of straight sides and the middle of the curved ends).

(TSR)

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	MC 1-31-03	2	MC 1-31-03	3	MC 1-31-03	4	MC 1-31-03
5	MC 1-31-03	6	MC 2-3-03				

4.5.5.10 M: Using a template, install and tighten all screws 360 to 480 in.-lb or 30 to 40 ft-lb.

(TSR)

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	1-31-03	2	1-31-03	3	1-31-03	4	1-31-03
5	1-31-03	6	2-3-03		1-31-03		

4.5.5.11 M: Using a template, tighten all screws 600 to 720 in.-lb or 50 to 60 ft-lb.

(TSR)

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	1-31-03	2	1-31-03	3	1-31-03	4	1-31-03
5	1-31-03	6	2-3-03				

4.5.5.11.1 QI: Verify that screws are torqued to the specified value.

(TSR)

QI Signature [signature] Date 1-31-03 SWB # 010282

QI Signature [signature] Date 1-31-03 SWB # 010259

QI Signature [signature] Date 1-31-03 SWB # 010227

QI Signature [signature] Date 1-31-03 SWB # 010288

QI Signature [signature] Date 1-31-03 SWB # 010263

QI Signature [signature] Date 2503 SWB # 010221

4.5.5.12 EO/M: If required, remove lid lift rigging and eyebolt and stage as directed.

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	NA 1-31-03	2	NA 1-31-03	3	NA 1-31-03	4	NA 1-31-03
5	NA 1-31-03	6	NA 2-3-03				

4.5.6 RCT: Survey each SWB for contamination as it is removed from the Hot Shop.

(WIPP, JSA)

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	[illegible]	2	[illegible]	3	[illegible]	4	[illegible]
5	[illegible]	6	[illegible]				

4.5.7 EO: Place the SWB(s) in designated area as directed.

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	[illegible]	2	[illegible]	3	[illegible]	4	[illegible]
5	[illegible]	6	[illegible]				

4.5.8 SO: GO TO Appendix D and perform the container integrity inspection.

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	[illegible]	2	[illegible]	3	[illegible]	4	[illegible]
5	[illegible]	6	[illegible]				

4.5.9 RCT: Perform contamination survey and beta-gamma and neutron radiation surveys at contact, 1 m, and 2 m for each SWB; ensure contamination levels are less than or equal to 20 dpm/100 cm^2 alpha, and 200 dpm/100 cm^2 beta-gamma for transportation.

(WIPP, JSA)

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	[illegible]	2	[illegible]	3	[illegible]	4	[illegible]
5	[illegible]	6	[illegible]				

4.5.10 RCT: IF not already labeled,
THEN label SWB "Caution Radioactive Material" in a clearly visible location.

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	[illegible]	2	[illegible]	3	[illegible]	4	[illegible]
5	[illegible]	6	[illegible]				

4.5.11 SO: Apply hazardous/non-hazardous labels to SWB.

(WIPP)

Stopped Work 1-31-03 mdy

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	1-31-03	2	1-31-03	3	1-31-03	4	1-31-03
5	1-31-03	6	2-3-03				

4.5.12 HEO/EO: Lift the packaging into position on the conveyance vehicle.

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	2-3-03	2	2-3-03	3	2-3-03	4	2-3-03
5	2-3-03	6	2-3-03				

4.5.13 HEO/EO: Install wood cr other material to prevent longitudinal or lateral movement of the packaging.

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	2-3-03	2	2-3-03	3	2-3-03	4	2-3-03
5	2-3-03	6	2-3-03				

NOTE: *The rigging must be anchored to the packaging by the lift clips at the top edge of the packaging.*

4.5.14 HEO/EO: Secure the packaging to the vehicle with webbing or other suitable rigging per 49 CFR 393, Subpart I requirements.

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	2-3-03	2	2-3-03	3	2-3-03	4	2-3-03
5	2-3-03	6	2-3-03				

4.5.15 HEO/EO: Verify that all rigging and equipment is secure before shipment.

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	2-3-03	2	2-3-03	3	2-3-03	4	2-3-03
5	2-3-03	6	2-3-03				

4.5.16 WCO: Input required data into the Waste Isolation Pilot Plant (WIPP) Waste Information System (WWIS) for the SWB.

#	Initial/Date	#	Initial/Date	#	Initial/Date	#	Initial/Date
1	2/3/03	2	2/3/03	3	2/3/03	4	2/3/03
5	2/3/03	6	2/3/03				

NOTE: *If previously-approved WWIS container data is required to be changed to facilitate WIPP acceptance of the SWBs, the approved WWIS Data Change Request Form must be obtained from the WWIS Data Administrator and included as an attachment to this procedure.*

4.5.17 WCO: Certify data for the SWB.

WCO Michael X Griffin Date 2/3/03 SWB # IDRFXWB03001

WCO Michael X Griffin Date 2/3/03 SWB # IDRFXWB03002

WCO Michael X Griffin Date 2/3/03 SWB # IDRFXWB03003

WCO Michael X Griffin Date 2/3/03 SWB # IDRFXWB03004

WCO Michael X Griffin Date 2/3/03 SWB # ~~IDRF...~~ IDRFXWB03005 2/3/03

WCO Michael X Griffin Date 2/3/03 SWB # IDRFXWB03006

SEE FC 98552 DAR 2/3/03

MG 2-3-03 4.5.18 WCO: Complete INEEL Form 461.02, "Radioactive Material Packaging Quality Control Inspection," for each SWB. See Bottom of page for remaining

1	WCO Michael X Griffin	DATE: 2/3/03	SWB# IDRFXWB03001

4.6 Post-Performance Activities

MG 2-3-03 4.6.1 JS: Conduct a post-job review in accordance with MCP-3003.

[signature] 2/3/03 4.6.2 TL/SS: Ensure the TPR is completed and acceptable for closure.

[signature] 2-3-03 JK 2/3/03 4.6.3 QE: Complete Quality Inspection Plan documentation.

[signature] 2-3-03 JK 2/3/03 4.6.4 QE: Ensure all TPR steps are completed, signed off, and dated. (Appendix B comments should be properly dispositioned and completed.)

[signature] 2-3-03 JK 2/3/03 4.6.5 QE: Ensure that any Non-Conformance Report items listed in Appendix B have been reported on a Non Conformance Report (NCR).

[signature] 2-3-03 JK 2/3/03 4.6.6 QE: Ensure that the total records package is complete (see Section 5) and has been assembled and transmitted to the Project and TAN Document Control Center using Forms 416.04, "QA Record(s) Validation/Verification Form," and 241.07, "Records Analysis and Transmittal Form."

4.5.18 signoffs

2	WCO: Michael X Griffin	DATE: 2/3/03	SWB#: IDRFXWB03002
3	WCO: Michael X Griffin	DATE: 2/3/03	~~S~~WB#: IDRFXWB03003 2/3/03
4	WCO: Michael X Griffin	DATE: 2/3/03	SWB#: IDRFXWB03004
5	WCO: Michael X Griffin	DATE: 2/3/03	SWB#: IDRFXWB03005
6	WCO: Michael X Griffin	DATE: 2/3/03	SWB#: IDRFXWB03006

DAR 2/3/02 SEE FC 98552

5. RECORDS

Record Description	Classification	Uniform File Code	Disposition Authority	Retention Period
TPR-6233 Case File	INEEL Lifetime QA WIPP WAP Nonpermanent QA	0276	A16-1.1	Permanent. Cut off when superseded, obsolete, or canceled.
Field Pack File: RWMC Form-287, Operations Document Checklist for Field Pack/TRUPACT Loading File - Consumable TPR-6233 - ~~S WB Assembly~~ Details Report, as applicable - ~~Payload Assembly~~ 14-Pack Layout report, as applicable - ~~PATCD~~(s) report as applicable	INEEL Nonpermanent QA	7403	ENVI-k-2-b EPI*	Cut off at project completion. Destroy 25 years after project completion.
- ~~Copy of~~ any NCR Report associated with TPR performance - Copy of Radiological Survey Report - Manual Drum Tracking Form - INEEL Form 433.34, INEEL Lift Plan - INEEL Form 433.34A, INEEL Lift Plan Supplement - CBFO-supplied shipping documents - WWIS Data Change Request Form, if needed	WIPP WAP Nonpermanent QA			

Record Description	Classification	Uniform File Code	Disposition Authority	Retention Period
INTEC-QA-0221, Quality Inspection of TRUPACT-157 Payload Disassembly Operations at Test Area North (TAN)	INEEL Lifetime QA WIPP WAP Nonpermanent QA	7204	A17-32-a EPI	Retain until item is removed from service.

6. REFERENCES

DOE-STD-1090-2001, DOE Hoisting and Rigging Standard

DOE Docket: 98-45-7A (Section 3.2), TRUPACT-II Standard Waste Box (SWB)

INEL-94/0209, "TANO Technical Safety Requirements"

TAN-JSA-6233

Code of Federal Regulation (CFR), Title 10, Part 835, Occupational Radiation Protection

CFR, Title 40, Subpart C, 262.32, Marking

CFR, Title 49, Part 393, Subpart I, Protection Against Shifting or Falling Cargo

DOE/WIPP-02-3122, Contact-Handled Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant

DOE/WIPP 02-3183, CH Packaging Program Guidance

DOE/WIPP 02-3184, CH Packaging Operations Manual

WIPP Procedure WP 08-PT.01, Standard Waste Box Handling and Operation Manual

EDF-2326, Dented 55 Gal. Drum Stress Analysis

INEEL Radiological Control Manual

MCP-139, Radiological Surveys

MCP-2520, TRU Waste Characterization Program Quality Assurance Records Management

MCP-2716, Personal Protective Equipment

MCP-3003, Performing Pre-Job Briefings and Post-Job Reviews

PLN-577, TRUPACT-II Authorized Methods for Payload Control (TRAMPAC) Compliance Plan

PLN-1165, Transport Plan for Shipment of Transuranic Waste Drums between TAN and RWMC

TRUPACT-II Certificate of Compliance

TRUPACT-II Safety Analysis Report, Appendix 1.3.5

7. APPENDIXES

Appendix A – Procedure Basis

Appendix B – Comment Sheet

Appendix C – Manual Drum Tracking Form

Appendix D – Container Integrity Inspection

APPENDIX A

Procedure Basis

Step	Basis	Reference
General	Activities affecting quality shall be prescribed by and performed in accordance with documented instructions, procedures, or drawings that include appropriate quantitative or qualitative acceptance criteria for determining that prescribed results have been satisfactorily attained.	PRD-5076 Section 4.1.1.1
2.4 through 2.9, 3.1.2, 3.1.4, 3.4.1, 4.2.2, 4.2.2.1, 4.2.2.5.1, 4.4.1, Note preceding 4.4.4, 4.4.4, 4.4.9, 4.4.11, 4.4.13, 4.4.22, 4.4.24, 4.4.26, Warning preceding 4.5.5.6, 4.5.6, 4.5.9	Implementation of JSA requirements.	TAN JSA-6233
2.2	The Adjustable Center-of-Gravity Lift Fixture (ACGLF) is designed to handle the weight of the following configurations: an OCA lid assembly an ICV lid an empty ICV assembly a loaded payload (i.e., 14 drums), two SWBs, or one ten-drum overpack (TDOP). The ACGLF is **NOT** designed to lift the weight of the following configurations: a loaded CH package or empty CH packaging a loaded or empty OCA a loaded ICV.	DOE/WIPP 02-3183, Section 1.6.4

Step	Basis	Reference
3.3, 4.3.5, 4.3.6, 4.3.7.2, 4.3.7.3, 4.3.9, 4.3.9.1, 4.3.10, 4.3.11, 4.3.12, 4.3.13, 4.3.14, 4.5.5.6, 4.5.5.7 Note 2, 4.5.5.8, 4.5.5.9, 4.5.5.10, 4.5.5.11, 4.5.5.11.1	The TRU mixed waste drums shall be transported in a standard waste box. The standard waste box shall be assembled in accordance with the WP 08-PT.01, *Standard Waste Box Handling and Operation Manual.*	PLN-1165 Section (TSR) 7.1
3.3, 3.4.3.1	For the purpose of hazardous material procurement, a quality level (QL) is assigned to each type of packaging that correlates with the MCP-540 assigned safety categories: safety class is equivalent to QL-1. Section 6.5 assigns a safety class category to SWBs used for TRU mixed waste drum transport activity.	PLN-1165 Section 1.3
4.3.7.1, 4.3.9, 4.3.9.1	The standard waste boxes will be vented through two filters as specified in DOE/RL-96-57, *Test and Evaluation Document for DOT Specification 7A Type A Packaging.*	PLN-1165 Section (TSR) 7.3
4.5.12, 4.5.13, 4.5.14, 4.5.15	The standard waste boxes and ICV container will be secured to the transport vehicles in accordance with DOT instructions specified in 49 CFR 393, Subpart I. The tiedowns for the standard waste boxes will also be in accordance with the WP 08-PT.01, *Standard Waste Box Handling and Operation Manual.*	PLN-1165 Section 8.5
4.3.2, 4.5.11	Verify SWBs are properly labeled (e.g., bar code, shipping category)	DOE/WIPP 02-3184 Section 1.3.2
4.3.7.3	Verify at least two filters are installed in each SWB and the remaining ports are plugged (if not filtered).	DOE/WIPP 02-3184 Section 1.3.1
4.4.11, 4.4.24	If beta-gamma and alpha surveys are required, survey using site-specific procedures	DOE/WIPP 02-3184 Section 1.3.7
4.5.6, 4.5.9	If beta-gamma and alpha surveys are required, survey using site-specific procedures	DOE/WIPP 02-3184 Section 1.3.7
4.5.2	Dunnage drums shall have open vent ports (i.e., not filtered or plugged).	DOE/WIPP 02-3184

APPENDIX B

Comment Sheet

NOTE: *Any documents (Such as NCRs, WOs, DRs) issued to close, track, or resolve comments are recorded in the comment section.*

Initial	Date/Time	Page No.	Step No.	Comments/Notes/Observations
[illegible]	1/30/03 0800	11/38	4.3	Steps in sec 4.3 were Reperformed IN order to promote efficiency, and Complete swb staging, and did not Misdirect procedure flow.
[illegible]	1/30/03 0845	16/38	4.4.1 4.4.2	these steps were reperformed to ensure equipment and conditions were adequate for a new day.
[illegible]	1/30/03 1045	18/38	4.4.11.1	position #7 was N/A'd per step directions, however Rad-Con foremen directed operators to apply fixative as Best Management practice.
[illegible]	1/31/03 1250	14, 15/38	4.3.10 Thru 4.3.14,	These steps were reperformed two additional times due to the need to replace damaged swb lid gaskets. step 4.3.12 was not Reperformed because it did not deal with the gaskets.
[illegible]	1/31/03 1320	22/38	4.5.3	this step Reperformed to re-install dunnage drums that were found to contain water, drained, then replaced.
[illegible]	1/31/03 1330	23/38	4.5.5.1 4.5.5.2	Step were not performed for drums not bagged.
[illegible]	1/31/03 1520	25/38	4.5.5.7	Reperform step for new torque wrench DUE TO MALFUNCTION OF ORIGINAL TORQUE WRENCH
[illegible]	1/31/03 1535	25/38	4.5.5.7	performed step 4.5.5.7 the third time with additional torque wrench that has a narrower Range.

APPENDIX B

Comment Sheet

NOTE: *Any documents (Such as NCRs, WOs, DRs) issued to close, track, or resolve comments are recorded in the comment section.*

Initial	Date/Time	Page No.	Step No.	Comments/Notes/Observations
[illegible]	2/3/03 1420		4.7.27.8	We are performing a "Go to" step to go to step 4.7.25 + Reperform" steps 4.7.25 and 4.7.26 then "Go to" step 4.5.5, this action has no adverse impact on procedure.
[illegible]	2/3/03 1500	11	4.3.2	Reperformed this step because the SWB Weight Changed by 4 Emergency drums in SWB.
[illegible]	2/3/03 1915	22	4.5.1 to 4.5.3.	Block #1, SWB had no Dunnage Drum. Block #3, Initially Had no Dunnage until Payload was Reconfigured, Steps for adding Dunnage were Worked in Sec. 4.7 per Dar 98552.
[illegible]	2/3/03 1930	30	Sec. 5.	the SWB assembly Details Report, the Payload assembly 14-Pack lay-out Report, and the PATCDs Report are to be supplied by TRPPS System as applicable.

APPENDIX C

Manual Drum Tracking Form

	Container ID# (IDRF)	Standard Waste Box ID#	SO (initial)[a]	QI (initial)[b]	Comments
1.	IDRF741 202 484	IDRFXWB0 30007	RK/JS	RCS	
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					

a. SO initials indicate drum was moved to the correct Standard Waste Box (SWB).
b. QI initials indicate proper placement of the drum in the designated SWB.

SWEPP Operator (SO) Signature Robin K Klein / [illegible] Date 2-03-03

Quality Inspector (QI) Signature [illegible] Date 2-3-03

APPENDIX C

Manual Drum Tracking Form

	Container ID# (IDRF)	Standard Waste Box ID#	SO (initial)[a]	QI (initial)[b]	Comments
1.	IDRF004 102263	IDRFXWBO 30001	RK/JS	RCJ	
2.	IDRF004 002801	IDRFXWBO 30001	RK/JS	RCJ	
3.	IDRF004 101890	IDRFXWBO 30001	RK/JS	RCJ	
4.	IDRF004 102254	IDRFXWBO 30001	RK/JS	RCJ	
5.	IDRF004 002790	IDRFXWBO 30002	RK/JS	RCJ	
6.	IDRF741 202088	IDRFXWBO 30003	RK/JS	RCJ	
7.	IDRF741 202484	IDRFXWBO 30003	RK/JS	RCJ	> 100 dpm contamination found on top of drum. Fixadent applied. Drum bagged
8.	IDRF741 205405	IDRFXWBO 30003	RK/JS	RCJ	
9.	IDRF741 201615	IDRFXWBO 30003	RK/JS	RCJ	
10.	IDRF074 700411	IDRFXWBO 30006	RK/JS	KET	
11.	IDRF741 201718	IDRFXWBO 30004	RK/JS	KET	
12.	IDRF741 204650	IDRFXWBO 30004	RK/JS	KET	
13.	IDRF074 700394	IDRFXWBO 30006	RK/JS	KET	
14.	IDRF074 221338	IDRFXWBO 30005	RK/JS	KET	

a. SO initials indicate drum was moved to the correct Standard Waste Box (SWB).
b. QI initials indicate proper placement of the drum in the designated SWB.

SWEPP Operator (SO) Signature Robin Killian / [illegible] Date 1-30-03

Quality Inspector (QI) Signature K. Lly Thompson / RC Justice Date 1-30-03 / 1-30-03

APPENDIX D

Container Integrity Inspection

SWB # IDRF XWB030001

Note: *The SO should circle the correct answer in the "Compliance" column.*

CONTAINER EXAMINATION	DISCUSSION OF CRITERIA	COMPLIANCE
1. Is the payload container obviously degraded?	Obviously degraded means clearly visible and potentially significant defects in the payload container or payload container surface.	YES (NO)
2. Is there evidence that the payload container is, or has been, pressurized?	Pressurization can be indicated by a fairly uniform expansion of the sidewalls, bottom or top. Past pressurization can be indicated by a notable outward deflection of the bottom or top. Verify that the drum is not warped.	YES (NO)
3. Is there any potentially significant rust or corrosion such that wall thinning, pinholes, or breaches are likely or the load bearing capacity is suspect?	Rust shall be assessed in terms of its type, extent, and location. Pitting, pocking, flaking, or dark coloration characterizes potentially significant rust or corrosion. This includes the extent of the payload container surface area covered, thickness, and, if it occurs in large flakes or built-up (caked) areas. Rusted payload containers may not be accepted if: • Rust is present in caked layers or deposits • Rust is present in the form of deep metal flaking, or built-up areas of corrosion products In addition, the location of rust should be noted; for example on a drum: top lid; filter region; locking chine; top one-third, above the second rolling hoop; middle one-third, between the first and second rolling hoops; bottom one-third, below the second rolling hoop; and on the bottom. Payload containers may still be considered acceptable if the signs of rust show up as: • Some discoloration on the payload container • If rubbed would produce fine grit or dust or minor flaking (such that wall thinning does not occur)	YES (NO)
4. Are any of the following apparent? • wall thinning • pinholes • breaches	Wall thinning, pinholes, and breaches can be a result of rust/corrosion (see discussion for #3).	YES (NO)
5. Are there any split seams, tears, obvious holes, punctures (of any size), creases, broken welds, or cracks?	Payload containers with obvious leaks, holes or openings, cracks, deep crevices, creases, tears, broken welds, sharp edges or pits, are either breached or on the verge of being breached. Verify that there is no warpage that could cause the container to be unstable or prevent it from fitting properly in the TRUPACT-II.	YES (NO)

CONTAINER EXAMINATION		DISCUSSION OF CRITERIA		COMPLIANCE	
6. Is the load-bearing capacity suspect?		The load-bearing capacity could be reduced for excessive rust (see discussion for #3), wall thinning (see discussion for #4), breaches, cracks, creases, broken welds, etc. (see discussion for #5).		YES	NO
7. Is the payload container improperly closed?		Inspect the fastener and fastener ring (chine) if applicable for damage or excessive corrosion. Check the alignment of the fastener to ensure that it is in firm contact around the entire lid and the payload container will not open during transportation.		YES	NO
8. Are there any dents, scrapes, or scratches that make the payload container's structural integrity questionable or prevent the top and bottom surfaces from being parallel?		Deep gouges, scratches, or abrasions over wide areas are not acceptable. If top and bottom surfaces are not parallel, this would indicate that the container is warped. Dents should be less than ¼ inch deep by 3 inches long and between ½ inch to 6 inches wide. All other dents must be examined to determine impact of structural integrity if doing an inspection. (EDF-2326).		YES	NO
9. Is there discoloration which would indicate leakage or other evidence of leakage of material from the payload container?		Examine the payload container regions near vents, top lid fittings, bottom fittings, welds, seams and intersections of one or more metal sheets or plates. Payload containers must be rejected if evidence of leakage is present.		YES	NO
10. Is the payload container bulged?		For the purposes of this examination, bulging is indicated by: • A fairly uniform expansion of the sidewalls, bottom, or top (e.g., in the case of a drum, either the top or bottom surface protrudes beyond the planar surface of the top or bottom ring, • A protrusion of the side wall (e.g., in the case of a drum, beyond a line connecting the peaks of the surrounding rolling hoops or a line between a surrounding rolling hoop and the bottom or top ring), or • Expansion of the sidewall (e.g., in the case of a drum, such that it deforms any portion of a rolling hoop).		YES	NO

SO: Kelly Hoyle Michael Nelson 1-31-03
Signature Date

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APPENDIX D

Container Integrity Inspection

SWB # IDRFXWB030002

Note: *The SO should circle the correct answer in the "Compliance" column.*

CONTAINER EXAMINATION		DISCUSSION OF CRITERIA		COMPLIANCE	
1. Is the payload container obviously degraded?		Obviously degraded means clearly visible and potentially significant defects in the payload container or payload container surface.		YES	(NO)
2. Is there evidence that the payload container is, or has been, pressurized?		Pressurization can be indicated by a fairly uniform expansion of the sidewalls, bottom or top. Past pressurization can be indicated by a notable outward deflection of the bottom or top. Verify that the drum is not warped.		YES	(NO)
3. Is there any potentially significant rust or corrosion such that wall thinning, pinholes, or breaches are likely or the load bearing capacity is suspect?		Rust shall be assessed in terms of its type, extent, and location. Pitting, pocking, flaking, or dark coloration characterizes potentially significant rust or corrosion. This includes the extent of the payload container surface area covered, thickness, and, if it occurs in large flakes or built-up (caked) areas. Rusted payload containers may not be accepted if: • Rust is present in caked layers or deposits • Rust is present in the form of deep metal flaking, or built-up areas of corrosion products In addition, the location of rust should be noted; for example on a drum: top lid; filter region; locking chine; top one-third, above the second rolling hoop; middle one-third, between the first and second rolling hoops; bottom one-third, below the second rolling hoop; and on the bottom. Payload containers may still be considered acceptable if the signs of rust show up as: • Some discoloration on the payload container • If rubbed would produce fine grit or dust or minor flaking (such that wall thinning does not occur)		YES	(NO)
4. Are any of the following apparent? • wall thinning • pinholes • breaches		Wall thinning, pinholes, and breaches can be a result of rust/corrosion (see discussion for #3).		YES	(NO)
5. Are there any split seams, tears, obvious holes, punctures (of any size), creases, broken welds, or cracks?		Payload containers with obvious leaks, holes or openings, cracks, deep crevices, creases, tears, broken welds, sharp edges or pits, are either breached or on the verge of being breached. Verify that there is no warpage that could cause the container to be unstable or prevent it from fitting properly in the TRUPACT-II.		YES	(NO)

APPENDIX D

Container Integrity Inspection

SWB # IDRF-XWB030003

Note: *The SO should circle the correct answer in the "Compliance" column.*

CONTAINER EXAMINATION		DISCUSSION OF CRITERIA		COMPLIANCE	
1. Is the payload container obviously degraded?		Obviously degraded means clearly visible and potentially significant defects in the payload container or payload container surface.		YES	(NO) ✓
2. Is there evidence that the payload container is, or has been, pressurized?		Pressurization can be indicated by a fairly uniform expansion of the sidewalls, bottom or top. Past pressurization can be indicated by a notable outward deflection of the bottom or top. Verify that the drum is not warped.		YES	(NO) ✓
3. Is there any potentially significant rust or corrosion such that wall thinning, pinholes, or breaches are likely or the load bearing capacity is suspect?		Rust shall be assessed in terms of its type, extent, and location. Pitting, pocking, flaking, or dark coloration characterizes potentially significant rust or corrosion. This includes the extent of the payload container surface area covered, thickness, and, if it occurs in large flakes or built-up (caked) areas. Rusted payload containers may not be accepted if: • Rust is present in caked layers or deposits • Rust is present in the form of deep metal flaking, or built-up areas of corrosion products In addition, the location of rust should be noted; for example on a drum: top lid; filter region; locking chine; top one-third, above the second rolling hoop; middle one-third, between the first and second rolling hoops; bottom one-third, below the second rolling hoop; and on the bottom. Payload containers may still be considered acceptable if the signs of rust show up as: • Some discoloration on the payload container • If rubbed would produce fine grit or dust or minor flaking (such that wall thinning does not occur)		YES	(NO) ✓
4. Are any of the following apparent? • wall thinning • pinholes • breaches		Wall thinning, pinholes, and breaches can be a result of rust/corrosion (see discussion for #3).		YES	(NO) ✓
5. Are there any split seams, tears, obvious holes, punctures (of any size), creases, broken welds, or cracks?		Payload containers with obvious leaks, holes or openings, cracks, deep crevices, creases, tears, broken welds, sharp edges or pits, are either breached or on the verge of being breached. Verify that there is no warpage that could cause the container to be unstable or prevent it from fitting properly in the TRUPACT-II.		YES	(NO) ✓

CONTAINER EXAMINATION		DISCUSSION OF CRITERIA		COMPLIANCE
6. Is the load-bearing capacity suspect?		The load-bearing capacity could be reduced for excessive rust (see discussion for #3), wall thinning (see discussion for #4), breaches, cracks, creases, broken welds, etc. (see discussion for #5).		YES (NO) ✓
7. Is the payload container improperly closed?		Inspect the fastener and fastener ring (chine) if applicable for damage or excessive corrosion. Check the alignment of the fastener to ensure that it is in firm contact around the entire lid and the payload container will not open during transportation.		YES (NO) ✓
8. Are there any dents, scrapes, or scratches that make the payload container's structural integrity questionable or prevent the top and bottom surfaces from being parallel?		Deep gouges, scratches, or abrasions over wide areas are not acceptable. If top and bottom surfaces are not parallel, this would indicate that the container is warped. Dents should be less than ¼ inch deep by 3 inches long and between ½ inch to 6 inches wide. All other dents must be examined to determine impact of structural integrity if doing an inspection. (EDF-2326).		YES (NO) ✓
9. Is there discoloration which would indicate leakage or other evidence of leakage of material from the payload container?		Examine the payload container regions near vents, top lid fittings, bottom fittings, welds, seams and intersections of one or more metal sheets or plates. Payload containers must be rejected if evidence of leakage is present.		YES (NO) ✓
10. Is the payload container bulged?		For the purposes of this examination, bulging is indicated by: • A fairly uniform expansion of the sidewalls, bottom, or top (e.g., in the case of a drum, either the top or bottom surface protrudes beyond the planar surface of the top or bottom ring, • A protrusion of the side wall (e.g., in the case of a drum, beyond a line connecting the peaks of the surrounding rolling hoops or a line between a surrounding rolling hoop and the bottom or top ring), or • Expansion of the sidewall (e.g., in the case of a drum, such that it deforms any portion of a rolling hoop).		YES (NO) ✓

SO: Robin Killian Michael Hollar 02-03-03
Signature Date

APPENDIX D

Container Integrity Inspection

SWB # IORFXWB030004

Note: *The SO should circle the correct answer in the "Compliance" column.*

CONTAINER EXAMINATION		DISCUSSION OF CRITERIA		COMPLIANCE	
1. Is the payload container obviously degraded?		Obviously degraded means clearly visible and potentially significant defects in the payload container or payload container surface.		YES	(NO)
2. Is there evidence that the payload container is, or has been, pressurized?		Pressurization can be indicated by a fairly uniform expansion of the sidewalls, bottom or top. Past pressurization can be indicated by a notable outward deflection of the bottom or top. Verify that the drum is not warped.		YES	(NO)
3. Is there any potentially significant rust or corrosion such that wall thinning, pinholes, or breaches are likely or the load bearing capacity is suspect?		Rust shall be assessed in terms of its type, extent, and location. Pitting, pocking, flaking, or dark coloration characterizes potentially significant rust or corrosion. This includes the extent of the payload container surface area covered, thickness, and, if it occurs in large flakes or built-up (caked) areas. Rusted payload containers may not be accepted if: • Rust is present in caked layers or deposits • Rust is present in the form of deep metal flaking, or built-up areas of corrosion products In addition, the location of rust should be noted; for example on a drum: top lid; filter region; locking chine; top one-third, above the second rolling hoop; middle one-third, between the first and second rolling hoops; bottom one-third, below the second rolling hoop; and on the bottom. Payload containers may still be considered acceptable if the signs of rust show up as: • Some discoloration on the payload container • If rubbed would produce fine grit or dust or minor flaking (such that wall thinning does not occur)		YES	(NO)
4. Are any of the following apparent? • wall thinning • pinholes • breaches		Wall thinning, pinholes, and breaches can be a result of rust/corrosion (see discussion for #3).		YES	(NO)
5. Are there any split seams, tears, obvious holes, punctures (of any size), creases, broken welds, or cracks?		Payload containers with obvious leaks, holes or openings, cracks, deep crevices, creases, tears, broken welds, sharp edges or pits, are either breached or on the verge of being breached. Verify that there is no warpage that could cause the container to be unstable or prevent it from fitting properly in the TRUPACT-II.		YES	(NO)

TRUPACT-157 PAYLOAD DISASSEMBLY OPERATIONS AT TAN	Identifier: TPR-6233 Revision: 1 Page: 38 of 38

CONTAINER EXAMINATION		DISCUSSION OF CRITERIA		COMPLIANCE	
6. Is the load-bearing capacity suspect?		The load-bearing capacity could be reduced for excessive rust (see discussion for #3), wall thinning (see discussion for #4), breaches, cracks, creases, broken welds, etc. (see discussion for #5).		YES	NO (circled)
7. Is the payload container improperly closed?		Inspect the fastener and fastener ring (chine) if applicable for damage or excessive corrosion. Check the alignment of the fastener to ensure that it is in firm contact around the entire lid and the payload container will not open during transportation.		YES	NO (circled)
8. Are there any dents, scrapes, or scratches that make the payload container's structural integrity questionable or prevent the top and bottom surfaces from being parallel?		Deep gouges, scratches, or abrasions over wide areas are not acceptable. If top and bottom surfaces are not parallel, this would indicate that the container is warped. Dents should be less than ¼ inch deep by 3 inches long and between ½ inch to 6 inches wide. All other dents must be examined to determine impact of structural integrity if doing an inspection. (EDF-2326).		YES	NO (circled)
9. Is there discoloration which would indicate leakage or other evidence of leakage of material from the payload container?		Examine the payload container regions near vents, top lid fittings, bottom fittings, welds, seams and intersections of one or more metal sheets or plates. Payload containers must be rejected if evidence of leakage is present.		YES	NO (circled)
10. Is the payload container bulged?		For the purposes of this examination, bulging is indicated by: • A fairly uniform expansion of the sidewalls, bottom, or top (e.g., in the case of a drum, either the top or bottom surface protrudes beyond the planar surface of the top or bottom ring, • A protrusion of the side wall (e.g., in the case of a drum, beyond a line connecting the peaks of the surrounding rolling hoops or a line between a surrounding rolling hoop and the bottom or top ring), or • Expansion of the sidewall (e.g., in the case of a drum, such that it deforms any portion of a rolling hoop).		YES	NO (circled)

SO: [signature] 1-31-03
Signature Date

APPENDIX D

Container Integrity Inspection

SWB # IDAFXWB030005

Note: *The SO should circle the correct answer in the "Compliance" column.*

CONTAINER EXAMINATION		DISCUSSION OF CRITERIA		COMPLIANCE	
1. Is the payload container obviously degraded?		Obviously degraded means clearly visible and potentially significant defects in the payload container or payload container surface.		YES	(NO)
2. Is there evidence that the payload container is, or has been, pressurized?		Pressurization can be indicated by a fairly uniform expansion of the sidewalls, bottom or top. Past pressurization can be indicated by a notable outward deflection of the bottom or top. Verify that the drum is not warped.		YES	(NO)
3. Is there any potentially significant rust or corrosion such that wall thinning, pinholes, or breaches are likely or the load bearing capacity is suspect?		Rust shall be assessed in terms of its type, extent, and location. Pitting, pocking, flaking, or dark coloration characterizes potentially significant rust or corrosion. This includes the extent of the payload container surface area covered, thickness, and, if it occurs in large flakes or built-up (caked) areas. Rusted payload containers may not be accepted if: • Rust is present in caked layers or deposits • Rust is present in the form of deep metal flaking, or built-up areas of corrosion products In addition, the location of rust should be noted; for example on a drum: top lid; filter region; locking chine; top one-third, above the second rolling hoop; middle one-third, between the first and second rolling hoops; bottom one-third, below the second rolling hoop; and on the bottom. Payload containers may still be considered acceptable if the signs of rust show up as: • Some discoloration on the payload container • If rubbed would produce fine grit or dust or minor flaking (such that wall thinning does not occur)		YES	(NO)
4. Are any of the following apparent? • wall thinning • pinholes • breaches		Wall thinning, pinholes, and breaches can be a result of rust/corrosion (see discussion for #3).		YES	(NO)
5. Are there any split seams, tears, obvious holes, punctures (of any size), creases, broken welds, or cracks?		Payload containers with obvious leaks, holes or openings, cracks, deep crevices, creases, tears, broken welds, sharp edges or pits, are either breached or on the verge of being breached. Verify that there is no warpage that could cause the container to be unstable or prevent it from fitting properly in the TRUPACT-II.		YES	(NO)

CONTAINER EXAMINATION		DISCUSSION OF CRITERIA		COMPLIANCE	
6. Is the load-bearing capacity suspect?		The load-bearing capacity could be reduced for excessive rust (see discussion for #3), wall thinning (see discussion for #4), breaches, cracks, creases, broken welds, etc. (see discussion for #5).		YES	(NO)
7. Is the payload container improperly closed?		Inspect the fastener and fastener ring (chine) if applicable for damage or excessive corrosion. Check the alignment of the fastener to ensure that it is in firm contact around the entire lid and the payload container will not open during transportation.		YES	(NO)
8. Are there any dents, scrapes, or scratches that make the payload container's structural integrity questionable or prevent the top and bottom surfaces from being parallel?		Deep gouges, scratches, or abrasions over wide areas are not acceptable. If top and bottom surfaces are not parallel, this would indicate that the container is warped. Dents should be less than ¼ inch deep by 3 inches long and between ½ inch to 6 inches wide. All other dents must be examined to determine impact of structural integrity if doing an inspection. (EDF-2326).		YES	(NO)
9. Is there discoloration which would indicate leakage or other evidence of leakage of material from the payload container?		Examine the payload container regions near vents, top lid fittings, bottom fittings, welds, seams and intersections of one or more metal sheets or plates. Payload containers must be rejected if evidence of leakage is present.		YES	(NO)
10. Is the payload container bulged?		For the purposes of this examination, bulging is indicated by: • A fairly uniform expansion of the sidewalls, bottom, or top (e.g., in the case of a drum, either the top or bottom surface protrudes beyond the planar surface of the top or bottom ring, • A protrusion of the side wall (e.g., in the case of a drum, beyond a line connecting the peaks of the surrounding rolling hoops or a line between a surrounding rolling hoop and the bottom or top ring), or • Expansion of the sidewall (e.g., in the case of a drum, such that it deforms any portion of a rolling hoop).		YES	(NO)

SO: Michael Mahaffey 1-31-03

Signature Date

APPENDIX D

Container Integrity Inspection

SWB # IDRF XLVB030006

Note: *The SO should circle the correct answer in the "Compliance" column.*

CONTAINER EXAMINATION		DISCUSSION OF CRITERIA		COMPLIANCE
1. Is the payload container obviously degraded?		Obviously degraded means clearly visible and potentially significant defects in the payload container or payload container surface.		YES (NO) KH 1-31-03
2. Is there evidence that the payload container is, or has been, pressurized?		Pressurization can be indicated by a fairly uniform expansion of the sidewalls, bottom or top. Past pressurization can be indicated by a notable outward deflection of the bottom or top. Verify that the drum is not warped.		YES (NO)
3. Is there any potentially significant rust or corrosion such that wall thinning, pinholes, or breaches are likely or the load bearing capacity is suspect?		Rust shall be assessed in terms of its type, extent, and location. Pitting, pocking, flaking, or dark coloration characterizes potentially significant rust or corrosion. This includes the extent of the payload container surface area covered, thickness, and, if it occurs in large flakes or built-up (caked) areas. Rusted payload containers may not be accepted if: • Rust is present in caked layers or deposits • Rust is present in the form of deep metal flaking, or built-up areas of corrosion products In addition, the location of rust should be noted; for example on a drum: top lid; filter region; locking chine; top one-third, above the second rolling hoop; middle one-third, between the first and second rolling hoops; bottom one-third, below the second rolling hoop; and on the bottom. Payload containers may still be considered acceptable if the signs of rust show up as: • Some discoloration on the payload container • If rubbed would produce fine grit or dust or minor flaking (such that wall thinning does not occur)		YES (NO)
4. Are any of the following apparent? • wall thinning • pinholes • breaches		Wall thinning, pinholes, and breaches can be a result of rust/corrosion (see discussion for #3).		YES (NO)
5. Are there any split seams, tears, obvious holes, punctures (of any size), creases, broken welds, or cracks?		Payload containers with obvious leaks, holes or openings, cracks, deep crevices, creases, tears, broken welds, sharp edges or pits, are either breached or on the verge of being breached. Verify that there is no warpage that could cause the container to be unstable or prevent it from fitting properly in the TRUPACT-II.		YES (NO)

CONTAINER EXAMINATION		DISCUSSION OF CRITERIA		COMPLIANCE
6. Is the load-bearing capacity suspect?		The load-bearing capacity could be reduced for excessive rust (see discussion for #3), wall thinning (see discussion for #4), breaches, cracks, creases, broken welds, etc. (see discussion for #5).		YES (NO)
7. Is the payload container improperly closed?		Inspect the fastener and fastener ring (chine) if applicable for damage or excessive corrosion. Check the alignment of the fastener to ensure that it is in firm contact around the entire lid and the payload container will not open during transportation.		YES (NO)
8. Are there any dents, scrapes, or scratches that make the payload container's structural integrity questionable or prevent the top and bottom surfaces from being parallel?		Deep gouges, scratches, or abrasions over wide areas are not acceptable. If top and bottom surfaces are not parallel, this would indicate that the container is warped. Dents should be less than ¼ inch deep by 3 inches long and between ½ inch to 6 inches wide. All other dents must be examined to determine impact of structural integrity if doing an inspection. (EDF-2326).		YES (NO)
9. Is there discoloration which would indicate leakage or other evidence of leakage of material from the payload container?		Examine the payload container regions near vents, top lid fittings, bottom fittings, welds, seams and intersections of one or more metal sheets or plates. Payload containers must be rejected if evidence of leakage is present.		YES (NO)
10. Is the payload container bulged?		For the purposes of this examination, bulging is indicated by: • A fairly uniform expansion of the sidewalls, bottom, or top (e.g., in the case of a drum, either the top or bottom surface protrudes beyond the planar surface of the top or bottom ring, • A protrusion of the side wall (e.g., in the case of a drum, beyond a line connecting the peaks of the surrounding rolling hoops or a line between a surrounding rolling hoop and the bottom or top ring), or • Expansion of the sidewall (e.g., in the case of a drum, such that it deforms any portion of a rolling hoop).		YES (NO)

SO: Kelly Hoyle Michael Malaro 1-31-03
Signature Date

APPENDIX D

Container Integrity Inspection

SWB # IDRFXWB030007

Note: *The SO should circle the correct answer in the "Compliance" column.*

CONTAINER EXAMINATION	DISCUSSION OF CRITERIA	COMPLIANCE
1. Is the payload container obviously degraded?	Obviously degraded means clearly visible and potentially significant defects in the payload container or payload container surface.	YES (NO)
2. Is there evidence that the payload container is, or has been, pressurized?	Pressurization can be indicated by a fairly uniform expansion of the sidewalls, bottom or top. Past pressurization can be indicated by a notable outward deflection of the bottom or top. Verify that the drum is not warped.	YES (NO)
3. Is there any potentially significant rust or corrosion such that wall thinning, pinholes, or breaches are likely or the load bearing capacity is suspect?	Rust shall be assessed in terms of its type, extent, and location. Pitting, pocking, flaking, or dark coloration characterizes potentially significant rust or corrosion. This includes the extent of the payload container surface area covered, thickness, and, if it occurs in large flakes or built-up (caked) areas. Rusted payload containers may not be accepted if: • Rust is present in caked layers or deposits • Rust is present in the form of deep metal flaking, or built-up areas of corrosion products In addition, the location of rust should be noted; for example on a drum: top lid; filter region; locking chine; top one-third, above the second rolling hoop; middle one-third, between the first and second rolling hoops; bottom one-third, below the second rolling hoop; and on the bottom. Payload containers may still be considered acceptable if the signs of rust show up as: • Some discoloration on the payload container • If rubbed would produce fine grit or dust or minor flaking (such that wall thinning does not occur)	YES (NO)
4. Are any of the following apparent? • wall thinning • pinholes • breaches	Wall thinning, pinholes, and breaches can be a result of rust/corrosion (see discussion for #3).	YES (NO)
5. Are there any split seams, tears, obvious holes, punctures (of any size), creases, broken welds, or cracks?	Payload containers with obvious leaks, holes or openings, cracks, deep crevices, creases, tears, broken welds, sharp edges or pits, are either breached or on the verge of being breached. Verify that there is no warpage that could cause the container to be unstable or prevent it from fitting properly in the TRUPACT-II.	YES (NO)

CONTAINER EXAMINATION	DISCUSSION OF CRITERIA	COMPLIANCE
6. Is the load-bearing capacity suspect?	The load-bearing capacity could be reduced for excessive rust (see discussion for #3), wall thinning (see discussion for #4), breaches, cracks, creases, broken welds, etc. (see discussion for #5).	YES (NO) ✓
7. Is the payload container improperly closed?	Inspect the fastener and fastener ring (chine) if applicable for damage or excessive corrosion. Check the alignment of the fastener to ensure that it is in firm contact around the entire lid and the payload container will not open during transportation.	YES (NO) ✓
8. Are there any dents, scrapes, or scratches that make the payload container's structural integrity questionable or prevent the top and bottom surfaces from being parallel?	Deep gouges, scratches, or abrasions over wide areas are not acceptable. If top and bottom surfaces are not parallel, this would indicate that the container is warped. Dents should be less than ¼ inch deep by 3 inches long and between ½ inch to 6 inches wide. All other dents must be examined to determine impact of structural integrity if doing an inspection. (EDF-2326).	YES (NO) ✓
9. Is there discoloration which would indicate leakage or other evidence of leakage of material from the payload container?	Examine the payload container regions near vents, top lid fittings, bottom fittings, welds, seams and intersections of one or more metal sheets or plates. Payload containers must be rejected if evidence of leakage is present.	YES (NO) ✓
10. Is the payload container bulged?	For the purposes of this examination, bulging is indicated by: • A fairly uniform expansion of the sidewalls, bottom, or top (e.g., in the case of a drum, either the top or bottom surface protrudes beyond the planar surface of the top or bottom ring, • A protrusion of the side wall (e.g., in the case of a drum, beyond a line connecting the peaks of the surrounding rolling hoops or a line between a surrounding rolling hoop and the bottom or top ring), or • Expansion of the sidewall (e.g., in the case of a drum, such that it deforms any portion of a rolling hoop).	YES (NO) ✓

SO: Robin Killian Michael Halaas 02-03-03
Signature Date

Job/Title	JSA Number	Revision
TPR-6233, TRUPACT-157 Payload Disassembly Operations at TAN	TAN-JSA-6233	0

Facility/Project & Location	Effective Date	Facility/Project Management/Supervisor Approval / Date
TAN-607	11/26/02 Expiration Date 11/26/03	See DAR 96877

SME APPROVAL (A "Yes" response requires a signature and date.)

No	Yes	SME	Signature	Date	No	Yes	SME	Signature	Date
☐	☒	Industrial Safety	See DAR 96877		☐	☒	Quality Assurance	See DAR 96877	
☐	☒	Industrial Hygiene	See DAR 96877		☐	☒	Engineering	See DAR 96877	
☐	☒	Safety Analysis	See DAR 96877		☒	☐	Safeguards/NMC		
☐	☒	RCT/RAD Eng.	See DAR 96877		☒	☐	Maintenance		
☐	☒	Operations	See DAR 96877		☒	☐	Fire Protection		

Briefly Describe The Job and Expected Result
This job disassembles the TPUPACT-157 payload at Test Area North (TAN).

Required Job Training/Required Personal Protective Equipment
Training: Radworker II, HAZWOPER/TSD, TAN access Job position, hoisting and rigging, pre-job briefing.
PPE: Safety shoes and other PPE as required by the RWP.

Sequence Of Basic Job Steps	Potential Hazards	Hazard Control/PPE (other than that listed above)
1. General	a. Hoisting/rigging	a. Critical lifts require use of a Person in Charge (PIC). Periodic inspections are performed on hoisting and rigging equipment.
	b. Foot injury	b. Safety shoes must be worn when in the TAN Hot Shop.
	c. Carbon monoxide exposure	c. If fossil–fueled vehicle runs continuously, without a ventilation hose attached, for more than approximately 10 minutes inside the building a CO monitor must be obtained from Industrial Hygiene for use.
	d. Smashing	d. Parts of the body must not be placed under suspended loads with the following exceptions: ACGLF adjustments/leg changes, and guiding leg insertions.
	e. Heat stress	e. Heat stress monitoring must be performed per MCP-9240.
	f. Pinching	f. Non-essential personnel must stay clear during ACGLF operation.
	g. Radiological	g. Ensure RWP is followed and use good ALARA practices.
2. Moving the Payload assembly	a. See general hazards	
3. Disassembly of a 14-Pack Payload	a. See general hazards	
	b. Radiological	b. Ensure the tent ventilation system is functioning properly prior to performing work in the tent.
	c. Radiological	c. RadCon will direct whether the disassembly of the payload will be performed from inside the containment tent or from outside of the tent based on survey results and RWP requirements.

Sequence of Basic Job Steps	Potential Hazards	Hazard Control/PPE (other than that listed above)
	d. Radiological	d. RadCon concurrence must be obtained prior to removal of the poly sleeving around the payload.
4. SWB Assembly	a. See general hazards	
	b. Pinching	b. Fingers must be kept clear of pinch points between the SWB lid and body flange.

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412.11
09/12/2002
Rev. 09

DOCUMENT MANAGEMENT CONTROL SYSTEM (DMCS)
DOCUMENT ACTION REQUEST (DAR)

11/20/02

1. Document ID: TAN-JSA-6233 | Current Revision ID: 0 | See Block 8 for DAR # Info.
2. Document Title: TPR-6233, TRUPACT-157 Payload Disassembly Operations at TAN
3. Requester: C. Pinegale | Phone: 6-6784 | MS: 5201 | E-mail: cpo3... | S No.: 060227
4. Type: ☒ Document ☐ Drawing
5. Type of action: ☒ Create ☐ Revise ☐ Cancel
6. Field Change: ☒ No ☐ Yes If Yes, will the change be: ☐ Permanent or ☐ Temporary? If Temporary, enter the field change duration:
7. Proposed Action: Create new procedure

Item	Page No./ Section/Zone	Description	Justification
1	All	Create new JSA per attached.	A Hazards Evaluation Group (HEG) review and associated Job Safety Analysis (JSA) is required for TPR-6233.

8. Proposal Approval: ☒ Accepted ☐ Deferred ☐ Rejected — DAR No.: 96877 (For Accepted Proposals Only)
If rejected, indicate reason: ____________
Document Owner Printed Name: K. E. Streeper Signature: [signature] Date: 11-19-02
Is this a minor document change? ☒ No ☐ Yes If Yes, proceed to Block 14. (For Operations procedures, go to Block 11.)

9. Management Approval (Excluding drawings, minor changes, & field changes):
Printed Name: K. E. Streeper Signature: [signature] Date: 11-19-02

10. Implementation Actions – Will the proposal require:
Hazard mitigation per MCP-3562 or MCP-3571? ☐ No ☒ Yes If Yes, This is JSA for TPR-6233
Training? ☐ No ☒ Yes If Yes, In pre-job briefs
Procurement activities? ☒ No ☐ Yes If Yes, ____________
Building modifications? ☒ No ☐ Yes If Yes, ____________
Other: None

11. Include a list of reviewers and review comments and resolutions with this form or have reviewers sign below.

Printed Name	Discipline	Org. No.	Signature	Date
K. M. Wendt	TAN System Engineer	5225	K.M. Wendt	11-19-02
[illegible]	Operations	[illegible]		11/19/02
J. Walker	Safety Analysis	5B30	J. B. Walker (per email)	11/19/02
J. K. Picker	TAN QA	[illegible]	[signature]	11/19/02
S. R. Camacho	TAN Industrial Safety	5290	[signature]	11/19/02
D. J. Sorensen	TAN RadCon	7610	[signature]	11-19-02
S. C. Combs	TAN IH	5200	[signature]	11-19-02

12. Is document a TPR or EAR? ☒ No ☐ Yes If Yes, indicate procedure validation method used:
☐ Formal Walkdown ☐ Tabletop Analysis ☐ Limited Trial Use/Field Use ☐ Partial Validation

13. ☒ Change does not affect a permitted area, TSD facility, or VCO component. (RCRA evaluation NOT required. Proceed to Block 14.)
☐ Change does affect a permitted area, TSD facility, or VCO component.
Is RCRA permit/application modified: ☐ No ☐ Yes ☐ Unknown
If Yes or Unknown, attach completed Form 435.29 or reference form's location here: ____________

E. Scott — Evaluator Printed Name | K.M. Wendt for E. Scott per telecon — Evaluator Signature | 11-19-02 — Date

Is VCO component affected? ☐ No ☐ Yes If Yes, contact the VCO Program Office for direction.

14. USQ Screening: (To be completed only after final document review.) List any associated change forms: ____________

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412.11
[illegible]/2002
Rev. 09

DOCUMENT MANAGEMENT CONTROL SYSTEM (DMCS)
DOCUMENT ACTION REQUEST (DAR)

11/26/02

1. Document ID: TAN-JSA-6233	Current Revision ID: [illegible]	See Block 8 for DAR # Info.

14. USQ screening required? (See instructions)
- ☐ Not Required (Proceed to Block 15)
- ☒ Required (Submit document and DAR to qualified USQ screener and attach USQ screening form.)
- ☒ USQ Evaluation Required? ☒ No ☐ Yes If Yes, attach evaluation. See USQ for TPR-6233

15. Does this action qualify as a periodic review? ☐ No ☐ Yes ☒ N/A

16. Desired effective date for document: Date of Block 18

17. Other documents affected by this action: TPR-6233

18. Document Owner Final Approval: (Changes in addition to those identified on the DAR, if applicable, have been approved during the review process. See document case file for the record of changes.) Approval signifies implementation actions are complete or document is ready as a pending document.

K. E. Ettinger — Document Owner Printed Name
[signature] for K. E. [illegible] PIC — Document Owner Signature
11-26-02 — Date

19. Drawing Checker Approval & Date: N/A	20. Document Control Release & Date: [signature] 11-26-02	21. Document Control Location: TAN-607 [illegible]
22. Comments:		23. New Revision ID: 0

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INSPECTION INSTRUCTION FORM

RED ORIGINAL BLACK COPY - SUPERCEDS INTEC-QA-0221, 1/22/03-INSPECTION RECORD COPY

Inspection Type: Construction ☐ Operations ☒ Receiving ☐ Source ☐ Requisition No.: N/A

Title/Description/Item: Quality Inspection Plan for TRUPACT-157 Payload Disassembly Operations At Test Area North (TAN)

Spec. No.: N/A Rev.: N/A Dwg. No.: As referenced in TPR-6233 Rev.: N/A

Insp. Plan No.: INTEC-QA-0221 ID No. (Work Order/Project/Purchase Order etc.): TPR-6233, Rev. 1 Quality Level: SC/QL-1

Inspection Planner: Alan Huot/Jim Rider K Huot 2/3/03 Date: 02/01/03 Requesting Organization Review (Optional): Kraig Wendt per telecon Date: 02/01/03

No.	Inspection Instruction & Acceptance Criteria	M&TE/Notes	Inspection Status/ Inspector & Date
	This inspection plan (IP) is written for Quality Inspection of payload disassembly/examination operations for the Transuranic (TRU) Package Transporter (TRUPACT)-II, Serial Number 157 recovery and subsequent loading of the waste barrels into Standard Waste Boxes (SWB)s. This activity includes removal of the Inner Containment Vessel (ICV) from the Outer Containment Assembly/Vessel (OCA/V) at the Test Area North (TAN) Hot Shop. ***PREREQUISITES:*** Quality Inspector(s) (QI) shall be certified as a General Level II QI per the requirements of MCP-535 and RWMC TRUPACT-II certified. **GENERAL INSTRUCTIONS:** 1. Applicable figures, if any, for this scope of work, are located in the associated Technical Procedure (TPR). 2. Immediately notify the JS or SS if any anomalies are identified. Notify the Shift Lead QE/QA Technical Lead if issues are not resolved by the JS or SS. Record notification information on this form. **Note: Work will be evaluated per MCP-553 until issues are satisfactorily resolved.** 3. When specific steps of TPR-6233 are not performed because the applicable portion of the TPR is not required to be performed, the corresponding step on this form must be Marked "N/A" and initialed and dated by the QI. 4. Indicate inspection status on all inspection steps/items in the Inspection Status column of this Inspection Plan (IP) with the following nomenclature: "sat" or "unsat"/"acceptable" or "unacceptable". QI add your initials, inspection date. 5. Any unacceptable inspection results shall be documented on a Quality Inspection Report, form # 414.03 with reference back to the associated with the step and/or item. Attach any generated inspection reports to this IP. 6. Record all NCR's issued in the "M&TE/Notes" column for the associated IP item. The NCR should reference back to the associated TPR step. Ensure any such NCR is also recorded in TPR-6233, Appendix B. 7. Attach all inspection reports to this IP documenting work covered.	N/A	N/A

INSPECTION INSTRUCTION FORM

No.	Inspection Instruction & Acceptance Criteria	M&TE/Notes	Inspection Status/ Inspector & Date
	8. Ensure all unacceptable inspection results are noted in the TPR comments, Appendix B. 9. Ensure suspect counterfeit items covered by MCP-9110 are not used in the process of this IP. 10. QI shall verify that all inspections are performed to the latest figure/drawing revisions, when referenced. 11. QI shall sign/initial both the appropriate TPR-6233 Steps and this Inspection Instruction Form: For TPR steps requiring multiple item inspection – sign the IP item after all the individual inspections are completed in the referenced TPR step.		
1.0	Verify that the current revision of TPR-6233 is in use.	Use of TPR-6233,Rev 1,verifed in 01/22/03 rev of IP.	
2.0 C-153	Verify that the SWBs staged for use at TAN are green tagged "QL-1" and SWB S/Ns match those listed in Packaging and Transportation (P&T) evaluation letter no. JLH-03-03. Record the SWB Serial numbers verified. (N/A any unused data blocks) SWB S/N: _____, _____, _____, _____ SWB S/N: _____, _____, _____, _____ (Step 3.4.3.1)	Verified in 01/22/03 revision of this IP.	
3.0	Accompany/observe the SO perform an inspection of SWB boxes and lids before loading. Inspect for damage. Acceptance Criteria: No bulges, dents, or deterioration that would affect the integrity of the container. **Note:** Take appropriate action per the **GENERAL INSTRUCTIONS** of this IP if damage in excess of that allowed is identified. (Step 4.3.6)	Verified in 01/22/03 revision of this IP.	
4.0	Record, in TPR-6233, torque wrench serial number(s) and calibration due date(s) for wrench to be used on SWB filters (Minimum 2, Maximum 4 each) and any plugs installed in unused filter ports. • Verify that torque wrench is within range for the intended use. (Reference Table 3.3 of TPR-6233.) • Verify calibration is current. (Step 4.3.8)	Verified in 01/22/03 revision of this IP.	

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INSPECTION INSTRUCTION FORM

No.	Inspection Instruction & Acceptance Criteria	M&TE/Notes	Inspection Status/ Inspector & Date
5.0	Verify SWB filters are installed. Verify pipe plugs are installed in any remaining open filter mount locations. Verify that installed filters are green tagged QL-2 (safety significant, SS) and listed by filter S/N in EDF-3435 (EDF upgraded these filters to QL-2 for use under Transport Plan PLN-1165). Record S/N of filters installed on each SWB. (N/A any unused data blocks) SWB S/N: _____ Filter S/N: _____, _____, _____, _____ SWB S/N: _____ Filter S/N: _____, _____, _____, _____ SWB S/N: _____ Filter S/N: _____, _____, _____, _____ SWB S/N: _____ Filter S/N: _____, _____, _____, _____ SWB S/N: _____ Filter S/N: _____, _____, _____, _____ SWB S/N: _____ Filter S/N: _____, _____, _____, _____ SWB S/N: _____ Filter S/N: _____, _____, _____, _____ SWB S/N: _____ Filter S/N: _____, _____, _____, _____	Verified in 01/22/03 revision of this IP.	

INSPECTION INSTRUCTION FORM

No.	Inspection Instruction & Acceptance Criteria	M&TE/Notes	Inspection Status/ Inspector & Date
	Verify appropriate range of wrench is used for torque (Reference Table 3.3 of TPR-6233.). Verify torque value of 120 to 180 in.-lbs. **OR** 10 to 15 ft.-lbs. each. (Step 4.3.9.1)		
6.0	Inspect SWB body sealing surface and adhesive side of gasket. **Acceptance criteria:** Gasket is free of rips, gouges or tears. SWB body sealing surface is free of damage, foreign particles or other contaminants that would inhibit sealing. (Step 4.3.11)	Verified in 01/22/03 revision of this IP.	
7.0 C-155	Inspect SWB threaded rivets for damaged threads, loose fit, etc. **Acceptance criteria:** Rivet will be tight (does not rotate) when checked by hand. rivet shall be undamaged -visually free of thread deformation, burrs, cross thread, cracks, etc. Note: If a rivet has minor thread deformation (burrs, cross thread, etc.) the user is permitted to correct the thread deformation by running a 1/2 in. 13 UNC thread tap through the rivet. If a tap is used, reinspect to original criteria. (Step 4.3.12)	Verified in 01/22/03 revision of this IP.	
8.0	Inspect SWB lid sealing surfaces, installed gasket condition, and ensure that the gasket is properly installed for each SWB. **Acceptance criteria:** 1. Sealing surface is free of damage, foreign particles or other contaminants that would inhibit sealing. 2. The four gasket parts are installed with mitered gasket ends interlocking without an overlap. 3. Holes in gasket align with bolt-holes in body of SWB. 4. Gasket is free of damage, foreign particles or other contaminants that would inhibit sealing. (Step 4.3.14)	Verified in 01/22/03 revision of this IP.	
9.0	Observe loading of the upper payload drums into their respective SWBs and perform the following: 1. Verify that drum placement entries on the Manual Drum Tracking Form (See Appendix C, Manual Drum Tracking form of the TPR) for drums relocated from the upper payload position are in compliance with the SWB shipping document supplied by the Carlsbad Field Office (CBFO).	Verified in 01/22/03 revision of this IP.	

INSPECTION INSTRUCTION FORM

No.	Inspection Instruction & Acceptance Criteria	M&TE/Notes	Inspection Status/ Inspector & Date
	2. Verify that the final location of each drum in the SWB is in compliance with the above entries on the Manual Drum Tracking Form. 3. Initial the Manual Drum tracking Form as each drum is loaded into the respective SWB and sign the bottom of the form at completion of the loading activity. 4. Sign the TPR referenced step when all drums from the upper payload position are loaded into their SWBs and the Manual Drum Tracking Form(s) are signed off by the QI verifying the loaded position. 5. Sign this IP item when upper payload layer drum placement signoffs are completed in the TPR. (Step 4.4.16)		
10.0 C-156	Observe loading of the lower payload drums into their respective SWBs and perform the following: 1. Verify that drum placement entries on the Manual Drum Tracking Form (See Appendix C, Manual Drum Tracking form of the TPR) for drums relocated from the lower payload position are in compliance with the SWB shipping document supplied by the Carlsbad Field Office (CBFO). 2. Verify that the final location of each drum in the SWB is in compliance with the above entries on the Manual Drum Tracking Form. 3. Initial the Manual Drum tracking Form as each drum is loaded into the respective SWB and sign the bottom of the form at completion of the loading activity. 4. Sign the TPR referenced step when all drums from the lower payload position are loaded into their SWBs and the Manual Drum Tracking Form(s) are signed off by the QI verifying the loaded position. 5. Sign this IP item when lower payload layer drum placement signoffs are completed in the TPR. (Step 4.4.29)	Verified in 01/22/03 revision of this IP.	
11.0	Verify that bagged payload drums in the SWB have a 2" minimum vent hole cut. (Step 4.5.5.4)	N/A	N/A RCJ 2-3-03
12.0	Record torque wrench serial number(s) and calibration due date(s) (for use on SWB lid screws) in TPR-6233. • Verify that torque wrench is within range for the intended use. (Reference Table 3.3 of TPR-6233.) • Verify calibration is current. (Step 4.5.5.7)	Verified in 01/22/03 revision of this IP.	

INSPECTION INSTRUCTION FORM

No.	Inspection Instruction & Acceptance Criteria	M&TE/Notes	Inspection Status/ Inspector & Date
13.0	Verify appropriate range of wrench issued for torque of SWB lid screws (Reference Table 3.3 of TPR-6233.). Verify final torque values of 600 to 720 in.-lbs. **OR** 50 to 60 ft.-lbs. In the template sequence. (Step 4.5.5.11.1)	SIGNED ON (VERIFIED) 1/22/03 REV. OF THIS IP. JKM 2/2/03 JKM 2/3/03 2/3/03	SaT RCJ 2-3-03
14.0	Verify that the SWBs staged for use at TAN are green tagged "QL-1" and SWB S/Ns match those listed in Packaging and Transportation (P&T) evaluation Letter No. JLH-03-03. Record the SWB Serial number verified. SWB S/N: 010248 (Step 4.7.1.1)		SaT RCJ 2-3-03
15.0 C-157	Accompany/observe the SO perform an inspection of SWB box and lid before loading. Inspect for damage. Acceptance Criteria: No bulges, dents, or deterioration that would affect the integrity of the container. **Note:** Take appropriate action per the **GENERAL INSTRUCTIONS** of this IP if damage in excess of that allowed is identified. (Step 4.7.7)		SaT RCJ 2-3-03
16.0	Record, in TPR-6233, torque wrench serial number(s) and calibration due date(s) for wrench to be used on SWB filters (Minimum 2, Maximum 4 each) and any plugs installed in unused filter ports. • Verify that torque wrench is within range for the intended use. (Reference Table 3.3 of TPR-6233.) • Verify calibration is current. (Step 4.7.9)		SaT RCJ 2-3-03
17.0	• Verify SWB filters are installed. Verify pipe plugs are installed in any remaining open filter mount locations. • Verify that installed filters are green tagged QL-2 (safety significant, SS) and listed by filter S/N in EDF-3435 (EDF upgraded these filters to QL-2 for use under Transport Plan PLN-1165). • Record S/N of filters installed on each SWB. SWB S/N: 010248 • Filter S/N: NFT-LH-6507, NFT-LH-6509, N/A, N/A • Verify appropriate range of wrench is used for torque (Reference Table 3.3 of TPR-6233.). • Verify torque value of 120 to 180 in.-lbs. **OR** 10 to 15 ft.-lbs. each. (Step 4.7.10.1)		SaT RCJ 2-3-03

INSPECTION INSTRUCTION FORM

No.	Inspection Instruction & Acceptance Criteria	M&TE/Notes	Inspection Status/ Inspector & Date
18.0	Inspect SWB body sealing surface and adhesive side of gasket. **Acceptance criteria:** Gasket is free of rips, gouges or tears. SWB body sealing surface is free of damage, foreign particles or other contaminants that would inhibit sealing. (Step 4.7.12)		SaT RCJ 2-3-03
19.0	Inspect SWB threaded rivets for damaged threads, loose fit, etc. **Acceptance criteria:** Rivets will be tight (does not rotate) when checked by hand. Rivets shall be undamaged -visually free of thread deformation, burrs, cross thread, cracks, etc. Note: If a rivet has minor thread deformation (burrs, cross thread, etc.) the user is permitted to correct the thread deformation by running a 1/2 in. 13 UNC thread tap through the rivet. If a tap is used, re-inspect to original criteria. (Step 4.7.13)		SaT RCJ 2-3-03
	Inspect SWB lid sealing surfaces, installed gasket condition, and ensure that the gasket is properly installed for each SWB. **Acceptance criteria:** • Sealing surface is free of damage, foreign particles or other contaminants that would inhibit sealing. • The four gasket parts are installed with mitered gasket ends interlocking without an overlap. • Holes in gasket align with bolt-holes in body of SWB. • Gasket is free of damage, foreign particles or other contaminants that would inhibit sealing. (Step 4.7.14)		SaT RCJ 2-3-03
21.0	Observe loading of the drum removed from the SWB for relocation into another SWBs and perform the following: • Verify that drum placement entries on the Manual Drum Tracking Form (See Appendix C, Manual Drum Tracking form of the TPR) for relocated drum for compliance with the Loading Plan or the shipping document supplied by the Carlsbad Field Office (CBFO). • Verify that the final location of the drum(s) in the SWB is in compliance with the above entries on the Manual Drum Tracking Form. • Initial the Manual Drum tracking Form when the drum(s) is loaded into the respective SWB and sign the bottom of the form at completion of the loading activity. • Sign the TPR referenced step when the relocated drum(s) is loaded into their SWBs and the Manual Drum Tracking Form(s) are signed off by the QI verifying the loaded position. • Sign this IP item when relocated drum placement signoff(s) is completed in the TPR. (Step 4.7.21)		SaT RCJ 2-3-03

INSPECTION INSTRUCTION FORM

No.	Inspection Instruction & Acceptance Criteria	M&TE/Notes	Inspection Status/ Inspector & Date
22.0	Record torque wrench serial number(s) and calibration due date(s) (for use on SWB lid screws) In TPR-6233. • Verify that torque wrench is within range for the intended use. (Reference Table 3.3 of TPR-6233.) • Verify calibration is current. (Step 4.7.27.3)		SAT RCJ 2-3-03
23.0	Verify appropriate range of wrench issued for torque of SWB lid screws (Reference Table 3.3 of TPR-6233.). Verify final torque values of 600 to 720 in.-lbs. **OR** 50 to 60 ft.-lbs. In the template sequence. (Step 4.7.27.7.1)		SAT RCJ 2-3-03
24.0	QE complete Quality Inspection Plan and TPR documentation reviews required by Section 4.6 of the TPR. (Section 4.6)		SAT JKHuh 2/3/03

IAL/ADDITIONAL COMMENTS:

nal Inspection Documentation Review:	2-3-03 JKHuh	Date:	2/3/03

INSPECTION INSTRUCTION FORM

RED ORIGINAL/BLACK COPY INSPECTION RECORD COPY

Inspection Type: Construction ☐ Operations ☒ Receiving ☐ Source ☐ Requisition No.: N/A

Title/Description/Item: Quality Inspection Plan for TRUPACT-157 Payload Disassembly Operations At Test Area North (TAN)

Spec. No.: N/A Rev.: N/A Dwg. No.: As referenced in TPR-6233 Rev.: N/A

Insp. Plan No.: INTEC-QA-0221 ID No. (Work Order/Project/Purchase Order etc.): TPR-6233, Rev. 1 Quality Level: SC/QL-1

Inspection Planner: Alan Huot/Jim Rider Date: 01/22/03 Requesting Organization Review (Optional): Kraig Wendt per e-mail Date: 01/22/03

JHuot 1/23/03

No.	Inspection Instruction & Acceptance Criteria	M&TE/Notes	Inspection Status/ Inspector & Date
C-160	This inspection plan (IP) is written for Quality Inspection of payload disassembly/examination operations for the Transuranic (TRU) Package Transporter (TRUPACT)-II, Serial Number 157 recovery and subsequent loading of the waste barrels into Standard Waste Boxes (SWB)s. This activity includes removal of the Inner Containment Vessel (ICV) from the Outer Containment Assembly/Vessel (OCA/V) at the Test Area North (TAN) Hot Shop. ***PREREQUISITES:*** Quality Inspector(s) (QI) shall be certified as a General Level II QI per the requirements of MCP-535 and RWMC TRUPACT-II certified. **GENERAL INSTRUCTIONS:** 1. Applicable figures, if any, for this scope of work, are located in the associated Technical Procedure (TPR). 2. Immediately notify the JS or SS If any anomalies are identified. Notify the Shift Lead QE/QA Technical Lead if issues are not resolved by the JS or SS. Record notification information on this form. **Note: Work will be evaluated per MCP-553 until issues are satisfactorily resolved.** 3. When specific steps of TPR-6233 are not performed because the applicable portion of the TPR is not required to be performed, the corresponding step on this form must be Marked "N/A" and initialed and dated by the QI. 4. Indicate inspection status on all inspection steps/items in the Inspection Status column of this Inspection Plan (IP) with the following nomenclature: "sat" or "unsat"/"acceptable" or "unacceptable". QI add your initials, inspection date. 5. Any unacceptable inspection results shall be documented on a Quality Inspection Report, form # 414.03 with reference back to the associated with the step and/or item. Attach any generated inspection reports to this IP. 6. Record all NCR's issued in the "M&TE/Notes" column for the associated IP item. The NCR should reference back to the associated TPR step. Ensure any such NCR is also recorded in TPR-6233, Appendix B. 7. Attach all inspection reports to this IP documenting work covered. 8. Ensure all unacceptable inspection results are noted in the TPR comments, Appendix B.	N/A	N/A

INSPECTION INSTRUCTION FORM

No.	Inspection Instruction & Acceptance Criteria	M&TE/Notes	Inspection Status/ Inspector & Date
	9. Ensure suspect counterfeit items covered by MCP-9110 are not used in the process of this IP. 10. QI shall verify that all inspections are performed to the latest figure/drawing revisions, when referenced. 11. QI shall sign/initial both the appropriate TPR-6233 Steps and this Inspection Instruction Form. For TPR steps requiring multiple item inspection – sign the IP item after all the individual inspections are completed in the referenced TPR step.		
1.0	Verify that the current revision of TPR-6233 is in use.		SAT RCJ 1-28-03
2.0	Verify that the SWBs staged for use at TAN are green tagged "QL-1" and SWB S/Ns match those listed in Packaging and Transportation (P&T) evaluation letter no. JLH-03-03. Record the SWB Serial numbers verified. (N/A any unused data blocks) SWB S/N: 010263 010221, 010259, 010227 SWB S/N: 010288, 010282, N/A, N/A (Step 3.4.3.1)		SAT RCJ 1-28-03
3.0	Accompany/observe the SO perform an inspection of SWB boxes and lids before loading. Inspect for damage. Acceptance Criteria: No bulges, dents, or deterioration that would affect the integrity of the container. **Note:** Take appropriate action per the **GENERAL INSTRUCTIONS** of this IP if damage in excess of that allowed is identified. (Step 4.3.6)		SAT RCJ 1-29-03
4.0	Record, in TPR-6233, torque wrench serial number(s) and calibration due date(s) for wrench to be used on SWB filters (Minimum 2, Maximum 4 each) and any plugs installed in unused filter ports. • Verify that torque wrench is within range for the intended use. (Reference Table 3.3 of TPR-6233.) • Verify calibration is current. (Step 4.3.8)		SAT RCJ 1-29-03

INSPECTION INSTRUCTION FORM

No.	Inspection Instruction & Acceptance Criteria	M&TE/Notes	Inspection Status/ Inspector & Date
5.0	Verify SWB filters are installed. Verify pipe plugs are installed in any remaining open filter mount locations. Verify that installed filters are green tagged QL-2 (safety significant, SS) and listed by filter S/N in EDF-3435 (EDF upgraded these filters to QL-2 for use under Transport Plan PLN-1165). Record S/N of filters installed on each SWB. (N/A any unused data blocks) SWB S/N: 010282 Filter S/N: NFT-LH-6501, NFT-LH-6505, NFT-LH 6529, NFT-LH-6530 SWB S/N: 010259 Filter S/N: NFT-LH-6540, NFT-LH6394, NFT-LH 6535, NFT-LH-6314 SWB S/N: 010221 Filter S/N: NFT-LH6534, NFT-LH 6539, NFT-LH 6528, NFT-LH-6527 SWB S/N: 010227 Filter S/N: NFT-LH6320, NFT-LH 6318, NFT-LH 6392, NFT-LH 6538 SWB S/N: 010288 Filter S/N: NFT-LH-6502, NFT-LH 6510, NFT-LH 6506, NFT-LH6504 SWB S/N: 010263 Filter S/N: NFT-LH6512, NFT-LH6615, NFT-LH 6620, NFT-LH 6605 SWB S/N: _____ Filter S/N: _____, N/A, _____, _____ SWB S/N: _____ Filter S/N: _____, _____, _____, _____		SAT RCJ 1-27-03

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INSPECTION INSTRUCTION FORM

No.	Inspection Instruction & Acceptance Criteria	M&TE/Notes	Inspection Status/ Inspector & Date
	Verify appropriate range of wrench is used for torque (Reference Table 3.3 of TPR-6233.). Verify torque value of 120 to 180 in.-lbs. **OR** 10 to 15 ft.-lbs. each. (Step 4.3.9.1)		RCJ 1-29-03
6.0	Inspect SWB body sealing surface and adhesive side of gasket. **Acceptance criteria:** Gasket is free of rips, gouges or tears. SWB body sealing surface is free of damage, foreign particles or other contaminants that would inhibit sealing. (Step 4.3.11)	Step repeated To replace damaged gasket sections on SWB 010259 and 010288 RCJ 1-31-03	RCJ 1-29-03
7.0	Inspect SWB threaded rivets for damaged threads, loose fit, etc. **Acceptance criteria:** Rivet will be tight (does not rotate) when checked by hand. rivet shall be undamaged -visually free of thread deformation, burrs, cross thread, cracks, etc. Note: If a rivet has minor thread deformation (burrs, cross thread, etc.) the user is permitted to correct the thread deformation by running a 1/2 in. 13 UNC thread tap through the rivet. If a tap is used, reinspect to original criteria. (Step 4.3.12)		RCJ 1-29-03
8.0	Inspect SWB lid sealing surfaces, installed gasket condition, and ensure that the gasket is properly installed for each SWB. **Acceptance criteria:** 1. Sealing surface is free of damage, foreign particles or other contaminants that would inhibit sealing. 2. The four gasket parts are installed with mitered gasket ends interlocking without an overlap. 3. Holes in gasket align with bolt-holes in body of SWB. 4. Gasket is free of damage, foreign particles or other contaminants that would inhibit sealing. (Step 4.3.14)	Step repeated To replace damaged gasket sections on SWB 010259 and 010288 RCJ 1-31-03	RCJ 1-29-03
9.0	Observe loading of the upper payload drums into their respective SWBs and perform the following: 1. Verify that drum placement entries on the Manual Drum Tracking Form (See Appendix C, Manual Drum Tracking form of the TPR) for drums relocated from the upper payload position are in compliance with the SWB shipping document supplied by the Carlsbad Field Office (CBFO).		RCJ SET 1-30-03

No.	Inspection Instruction & Acceptance Criteria	M&TE/Notes	Inspection Status/ Inspector & Date
	2. Verify that the final location of each drum in the SWB is in compliance with the above entries on the Manual Drum Tracking Form. 3. Initial the Manual Drum tracking Form as each drum is loaded into the respective SWB and sign the bottom of the form at completion of the loading activity. 4. Sign the TPR referenced step when all drums from the upper payload position are loaded into their SWBs and the Manual Drum Tracking Form(s) are signed off by the QI verifying the loaded position. 5. Sign this IP item when upper payload layer drum placement signoffs are completed in the TPR. (Step 4.4.16)		SET RCJ 1-30-03
10.0	Observe loading of the lower payload drums into their respective SWBs and perform the following: 1. Verify that drum placement entries on the Manual Drum Tracking Form (See Appendix C, Manual Drum Tracking form of the TPR) for drums relocated from the lower payload position are in compliance with the SWB shipping document supplied by the Carlsbad Field Office (CBFO). 2. Verify that the final location of each drum in the SWB is in compliance with the above entries on the Manual Drum Tracking Form. 3. Initial the Manual Drum tracking Form as each drum is loaded into the respective SWB and sign the bottom of the form at completion of the loading activity. 4. Sign the TPR referenced step when all drums from the lower payload position are loaded into their SWBs and the Manual Drum Tracking Form(s) are signed off by the QI verifying the loaded position. 5. Sign this IP item when lower payload layer drum placement signoffs are completed in the TPR. (Step 4.4.29)		SET RCJ 1-30-03
11.0	Verify that bagged payload drums in the SWB have a 2" minimum vent hole cut. (Step 4.5.5.4)	N/A	RCJ 2-3-03
12.0	Record torque wrench serial number(s) and calibration due date(s) (for use on SWB lid screws) in TPR-6233. • Verify that torque wrench is within range for the intended use. (Reference Table 3.3 of TPR-6233.) • Verify calibration is current. (Step 4.5.5.7)		SET RCJ 1-31-03

INSPECTION INSTRUCTION FORM

No.	Inspection Instruction & Acceptance Criteria	M&TE/Notes	Inspection Status/ Inspector & Date
13.0	Verify appropriate range of wrench issued for torque of SWB lid screws (Reference Table 3.3 of TPR-6233.). Verify final torque values of 600 to 720 in.-lbs. **OR** 50 to 60 ft.-lbs. In the template sequence. (Step 4.5.5.11.1)	*	
14.0	QE complete Quality Inspection Plan and TPR documentation reviews required by Section 4.6 of the TPR. (Section 4.6)		SAT JK Nichols 2/3/03

OPTIONAL/ADDITIONAL COMMENTS:

* Verified Torque wrench and Final Torque of 5 SWB's See Step 4.5.5.11.1 SAT RCJ 1-31-03
* Verified Torque wrench and Final Torque of 6TH SWB. SAT RCJ 2-3-03

Final Inspection Documentation Review:	JK Nichols	Date:	2/3/03

2-3-03

C-165

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ENGINEERING DESIGN FILE

1. Title: Upgrade Bung Filter Quality Level for Transport Plan PLN-1165

2. Project File No.: 23235

3. Index Codes:

Building/Type _____ SSC ID NFT-013 Bung Filter Site Area TAN

4. Summary:

This Engineering Design File justifies upgrading the following Bung Filters (NFT-013) purchased in 1996 with Requisition # 15828 on Purchase Order C96-180477 from Quality Level 3 to Quality Level 2. This upgrade is required to comply with Transport Plan, PLN-1165 Rev 0 Sec 6.5.2 requiring the filters to be safety significant. The serial numbers of the filters to be upgraded are listed in the following table.

NFT-LH-6314	NFT-LH-6394	NFT-LH-6506	NFT-LH-6512	NFT-LH-6533	NFT-LH-6540
NFT-LH-6318	NFT-LH-6501	NFT-LH-6507	NFT-LH-6527	NFT-LH-6534	NFT-LH-6605
NFT-LH-6320	NFT-LH-6502	NFT-LH-6509	NFT-LH-6528	NFT-LH-6535	NFT-LH-6610
NFT-LH-6321	NFT-LH-6504	NFT-LH-6510	NFT-LH-6529	NFT-LH-6538	NFT-LH-6615
NFT-LH-6392	NFT-LH-6505	NFT-LH-6511	NFT-LH-6530	NFT-LH-6539	NFT-LH-6620

Based on the information developed in this EDF, the Bung Filters procured from Nuclear Filter Technology, Inc (NFT) are consistent and acceptable with all the requirements set up by WIPP and incorporated into Specification ES-51589, Revision 1, Bung Style Drum Vent Filters. The filters were procured as Quality Level 2, receipt inspected, accepted and assigned QA Number 96A1665. Subsequently, the filters were tested at NFT under a Quality Level (QL) 3 procurement action. They were again processed through receipt inspection, accepted, and assigned QA No. 91012, and tagged as QL-3. The material, dimensions and performance of the filters have not changed (no modifications have been made). The testing was done using an approved procedure and meets the requirements identified in the Specification ES-51589 Rev 1. Based on this, the filters can be upgraded to QL-2.

5. Review (R) and Approval (A) and Acceptance (Ac) Signatures:
(See instructions for definitions of terms and significance of signatures.)

	R/A	Typed Name/Organization	Signature	Date
Author		Larry C Lewis	Larry C Lewis	1/22/03
Checker	R	Charley Posegate	C Posegate	1/22/03
Independent Peer Reviewer	A	Kraig Wendt	Kraig Wendt Per Telecon By Larry C Lewis	1/22/03
Dep. Owner	A	Tom Clements	Tom Clements Per Telecon By Larry C Lewis	1/22/03

ENGINEERING DESIGN FILE

Requestor	Ac	James Rider	JK Rider	1/22/03
SQAO	A	Alan Hout	JK Rider for A.J HUOT Per Telecon	1/22/03
Engineering Manager	A	W. E. Landon	W. E. LANDON per Telecon By Larry C Lewis	1/22/03

6. Distribution: (Name and Mail Stop) Clements T. L. 2510; WALE D. A. 9206; Rider J. K. 5306;Project File

7. Does document contain sensitive unclassified information? ☐ Yes ☒ No

If Yes, what category:

8. Can document be externally distributed? ☒ Yes ☐ No

9. Uniform File Code: Disposition Authority:

Record Retention Period:

10. For QA Records Classification Only: ☒ Lifetime ☐ Nonpermanent ☐ Permanent

Item and activity to which the QA Record apply:

11. NRC related? ☐ Yes ☒ No

12. Registered Professional Engineer's Stamp (if required)

NO

MAIN BODY

History

These Bung filters were procured from Nuclear Filter Technology, Inc. (NFT) in 1996 under Purchase Order (PO)# C96-180477. The filters were purchased to Quality Level (QL) 2 requirements to the Idaho National Engineering and Environmental Laboratory (INEEL) engineering Specification ES-51589, Rev. 0. Documentation was provided with the filters verifying compliance with the requirements in the specification that included a Certificate of Compliance certifying the type of material the filter, filter lid and gasket were made of and the testing performed on the filters. The filters were procured as Quality Level 2, receipt inspected, accepted and assigned Qualilty Assurance (QA) No. 96A1665.

In March of 2002, the filters were sent to NFT to verify that the filters were in compliance with INEEL Specification ES-51589, Rev. 1 using PO 6314. The testing was done at NFT's facility in Denver. They were again processed through receipt inspection, accepted, and assigned QA No. 91012, and tagged as QL-3.

Discussion

Flow and efficiency testing was done at NFT using an approved test method. That method was approved by Bechtel BWXT Idaho, LLC, (BBWI) through several onsite observations by INEEL personnel during the testing. Acceptance criteria for the performance testing are listed in Appendix 2.5, Specification for Filter Vents for the TRAMPAC and are identified in INEEL Specification for Bung Filters ES-51589, Rev. 2. - Only filters passing the performance testing criteria were sent back to INEEL in March, 2002.

Performance requirements for the Bung Filters in Specification ES-51589, Rev. 1 are the same as identified in ES-51589, Rev. 0. Material requirements have not changed and are the same for all revisions of the INEEL Specification. The only difference between Rev. 1 and the current revision, Rev. 2 is on page 3 of 9, the second sentence which was changed to allow the use of a hexagonal shaped filter head, and a sentence was added to the Performance Requirements identifying what documents drive the requirements.

The maximum envelope dimensions have not changed in the revisions of the specifications.

Documentation provided with the original procurement (PO # C-96-180477) and required by INEEL Specification ES-51589, Rev. 0 is the same as required by Rev. 1 of the specification. This documentation is included with the receiving inspection report and is attached to this EDF. 100 % performance testing was done by NFT in 1996 and those results are included in the receiving documentation. At the time this was done, there were some questions concerning the flow testing performed by NFT. This required sending the filters back to NFT in March, 2002 and having them retested. The other remaining documentation met the requirements of the specification and was accepted by INEEL.

The Bung Filters received in 1996 were sent back for retesting in March, 2002 under PO 6314. The retesting was done under INEEL Specification ES-51589, Rev. 1. As discussed earlier, there are no technical changes between Rev. 0 and Rev. 1 of the specification. The receiving inspection instructions for the tested filters require that test results be verified/included with tested filters, absent of shipping damage; and the quantity and serial numbers of filters checked. Documentation included with the filters is attached and includes the flow testing performed by NFT along with an interface document, ID-1, waiving source inspection by "over check" of performance testing of the NFT-013 bung filters. Any filter that was damaged or incomplete was "scrapped" and not included with the approved filters. The approved filters were given a QL 3 green tag with QA No. 91012.

Based on the above discussion, noting no differences in the Specifications, and that retesting has added additional insurance that the filters meet the flow requirements, the identified filters can be upgraded from QL-3 to QL-2 filters, and the Green tag changed accordingly.

APPENDICES

Receiving Inspection Information for P.O. C-96-180477

Receiving Inspection Information for P.O. 6314

Idaho National Engineering and Environmental Laboratory

INEEL
Home of Science and Engineering Solutions

INTEROFFICE MEMORANDUM

Date: January 20, 2003

To: A. J. Huot MS 3730 6-3569

From: J. L. Hansen MS 4105 6-8721

Subject: STANDARD WASTE BOX SAFETY CLASS EVALUATION, REVISION 1

The eight (8) TRUPACT-II Standard Waste Boxes (SWBs), listed below by their manufacturer's serial number, were purchased from Westinghouse TRU Solutions LLC, under BBWI Purchase Order # 00004539, as procurement Quality Level (QL) 3 items. These SWBs will be used to over-pack fourteen (14), 55-gallon drums of contact-handled transuranic (CH-TRU) waste for transport between the INEEL's Test Area North (TAN) Building 607, the Radioactive Waste Management Complex (RWMC), and the Waste Isolation Pilot Plant (WIPP). These drums that are to be overpacked in SWBs are from the INEEL's TRUPACT-II, certified Shipment No. IN020271, that was sent to the WIPP from RWMC and was involved in a vehicular mishap just outside of Carlsbad, New Mexico.

Transfer of the CH-TRU mixed waste drums within the INEEL's, TAN, and RWMC boundaries is neither regulated by the U.S. Department of Transportation nor licensed by the U.S. Nuclear Regulatory Commission. To ensure equivalent safety, the transport will be performed under INEEL Transport Plan 1165. A thorough hazard and accident analysis was performed per DOE-STD-1027-92, DOE-STD-3009-94, and 10 CFR 830, Subpart B requirements and guidelines. As a result of that hazard and accident analysis documented in Section 6.3 of Transport Plan (PLN-1165), the SWBs are considered *Safety Class* Structures, Systems, and Components (SSCs) per INEEL Management Control Procedure (MCP)-540, Rev. 13, *Documenting the Safety Category of Structures, Systems, and Components*. This Interoffice Memorandum documents the evaluation of previously procured SWBs for use during transport under PLN-1165.

As *Safety Class* SSCs, the SWBs would normally have been procured as Quality Level 1 items according to MCP-540, MCP-1185, and PLN-120 engineering and quality requirements. Because the SWBs were procured as QL 3 items under the original purchase order, an evaluation was conducted to ensure that adequate documentation and certification justify use of the SWBs in the *Safety Class* SSC application.

A graded approach is applied to all INEEL SSCs according to MCP-540 to determine a SSC's safety category. QLs are applied to each of the safety categories for procurement purposes in MCP-1185. The difference between the procurement of a QL 1 and a QL 3 hazardous material packaging is the documentation that ensures traceability to a specific specification or drawing, and the appropriate packaging test documentation required by the 49 CFR Hazardous Material Regulations. The evaluation of the SWBs *safety class* safety category was based on the procurement documentation to ensure traceability to specific design specifications and drawings, and documentation of required testing.

The SWBs were purchased by Westinghouse TRU Solutions LLC, from Petersen Incorporated, under Purchase Order (P.O.) Number 32653 with a Certificate of Conformance (see Enclosures 2, 3 and 4). BBWI purchased the SWBs from Westinghouse TRU Solutions under P.O. No. 00004539. The

following table provides the Manufacturer's Serial Number, the Westinghouse TRU Solutions P.O. and Release Number, the BBWI P.O. and Shipment Number, and the BBWI Quality Assurance (QA) Identification Number applied to the SWB upon completion of receipt inspection.

Manufacturer's Serial Number	Westinghouse TRU Solutions P.O. & (Release) Numbers	BBWI P.O. & Shipment Numbers	BBWI-QA Identification Number
010221	32653, Shipment 11	0004539, Rev. 1, Shipment 12	91863
010248	32653, Shipment 13	0004539, Rev. 1, Shipment 12	91863
010251	32653, Shipment 13	0004539, Rev. 1, Shipment 12	91863
010263	32653, Shipment 13	0004539, Rev. 1, Shipment 14	91969
010282	32653, Shipment 13	0004539, Rev. 1, Shipment 14	91969
010288	32653, Shipment 13	0004539, Rev. 1, Shipment 14	91969
010259	32653, Shipment 12	0004539, Rev. 1, Shipment 13	91863
010227	32653, Shipment 12	0004539, Rev. 1, Shipment 13	91863

A procurement data package is enclosed (Enclosures 2, 3, and 4) for each of the three BBWI SWB shipments. The SWB data packages include procurement data for all SWBs, including certificates of conformance for all eight (8) SWBs. This data provides conclusive evidence that the eight (8) SWBs were purchased from Westinghouse TRU Solutions LLC, under Blanket Purchase Order 32653, as Standard Waste Boxes, according to Westinghouse TRU Solutions LLC Drawing 165-F-001-W1, 165-F-001-W2, 165-F-001-W3, and 165-F-001-W4.

In addition, the SWBs have been evaluated and tested as DOT Specification 7A Type A Packagings for the U.S. Department of Energy. The test and evaluation was performed at the DOE laboratory in Richland, Washington, and is documented in DOE/RL-96-57, *Test and Evaluation Document for DOT Specification 7A Type A Packaging*. The testing was performed and documented according to the same specifications and drawings included in the BBWI procurement requirements for the SWBs. Enclosure 1 is a copy of the *Test and Evaluation Document for U.S. DOT Specification 7A Type A Packaging* for the TRUPACT-II Standard Waste Box under DOE Docket: 98-45-7A, 6/99. The package description section lists the drawing and specification numbers for the SWB consistent with the BBWI procurement data:

- *Westinghouse Waste Isolation Division Drawing No. 165-F-001-W, Revisions F through K*
- *Westinghouse Electric Company, Waste Isolation Division, Specification E-I-343, Revision 3, Specification for the TRUPACT-II Standard Waste Box (WEC 1999).*

In conclusion, the procurement documentation, Certifications of Conformance, and the TRUPACT II Test and Evaluation Document for the SWBs provide adequate justification for the Transport Plan (PLN-1165), Safety Class application. Therefore, all eight SWBs can be retagged and used as safety class items. Please contact myself on 526-8721, or Gene Kanemoto on 526-6161 with any questions.

bar

Enclosures:
1. Test and Evaluation Document for U.S. DOE Specification 7A Type A Packaging [3.2 TRUPACT-II Standard Waste Box (SWB) (Docket: 98-45-7A, 6/99)]
2. Records for SWBs SN 010263, SN 010282, SN 010288
3. Records for SWB SN 010221
4. Records for SWBs SN 010227, SN 010248, SN 010251, SN 010259

cc: (w/o Enc.)
T. F. Fallon, MS 5306
G. K. Kanemoto, MS 4105
M. D. Ruska, MS 4105
C. R. Tyler, MS 4105
R. J. Wade, MS 3114
R. L. Widhalm, MS 4105
Packaging & Transportation Document Control, MS 4105
J. L. Hansen Letter File (JLH-03-03)

Uniform File Code: 7253
Disposition Authority: ENVT-b-4-a
Retention Schedule: Cutoff at project completion. Destroy 25 years after project completion.

NOTE: Original disposition authority, retention schedule, and Uniform Filing Code applied by the sender may not be appropriate for all recipients. Make adjustments as needed.

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OPERATIONS DOCUMENT CHECKLIST FOR FIELD PACK FILE/TRUPACT LOADING FILE

PAYLOAD ASSEMBLY OPERATIONS

Pack No. and/or SWB No. IDRFXW13030007

Check or N/A

- [N/A] 2-3-03 Payload Assembly, 14-Pack Layout Report(s)
- [ ] Payload Disassembly, 14-Pack Layout Report(s)
- [ ] TPR-1648, TRUPACT-II Payload Assembly Operation
- [ ] SWB Assembly Details Report(s)
- [ ] Shipments, Packs, And Subassemblies
- [N/A] 2-3-03 Copy of NCR Report
- [✓] Copy of Radiological Survey Report(s)

TRUPACT LOADING OPERATIONS

TRUPACT-II(s) NA 2-3-03

- [N/A] 2-3-03 TPR-1666, TRUPACT-II Loading Operation in WMF-635
- [ ] TPR-1649, TRUPACT-II Loading Operation in WMF-618
- [ ] TRUPACT-II Maintenance Record Form
- [ ] PATCDs
- [ ] SWB Assembly Details Report(s)
- [ ] Container, Pack, TRUPACT, and Shipment Association Form/Report (Final Load Check) NA 2-3-03

OF Signature: [signature] Date: 2-3-03

Comments: SWB IS ASSEMBLED USING TPR-6233

OPERATIONS DOCUMENT CHECKLIST FOR FIELD PACK FILE/TRUPACT LOADING FILE

PAYLOAD ASSEMBLY OPERATIONS

Pack No. and/or SWB No. 1DRFXWB03000S
1DRFXWB03000G

Check or N/A

- [N/A] 2-3-03 Payload Assembly, 14-Pack Layout Report(s)
- [ ] Payload Disassembly, 14-Pack Layout Report(s)
- [ ] TPR-1648, TRUPACT-II Payload Assembly Operation
- [ ] SWB Assembly Details Report(s)
- [ ] Shipments, Packs, And Subassemblies
- [N/A] 2-3-03 Copy of NCR Report
- [✓] Copy of Radiological Survey Report(s)

TRUPACT LOADING OPERATIONS

TRUPACT-II(s) N/A 2-3-03

- [N/A] 2-3-03 TPR-1666, TRUPACT-II Loading Operation in WMF-635
- [ ] TPR-1649, TRUPACT-II Loading Operation in WMF-618
- [ ] TRUPACT-II Maintenance Record Form
- [ ] PATCDs
- [ ] SWB Assembly Details Report(s)
- [N/A] 2-3-03 Container, Pack, TRUPACT, and Shipment Association Form/Report (Final Load Check)

OF Signature: [signature] Date: 2-3-03

Comments: SWB's ASSEMBLED USING TPR-6233

OPERATIONS DOCUMENT CHECKLIST FOR FIELD PACK FILE/TRUPACT LOADING FILE

PAYLOAD ASSEMBLY OPERATIONS

Pack No. and/or SWB No. IDRFXWB030003
IDRFXWB030004

Check or N/A

- [NA KL 2-3-03] Payload Assembly, 14-Pack Layout Report(s)
- [ ] Payload Disassembly, 14-Pack Layout Report(s)
- [ ] TPR-1648, TRUPACT-II Payload Assembly Operation
- [ ] SWB Assembly Details Report(s)
- [ ] Shipments, Packs, And Subassemblies
- [NA KL 2-3-03] Copy of NCR Report
- [✓] Copy of Radiological Survey Report(s)

TRUPACT LOADING OPERATIONS

TRUPACT-II(s) NA KL 2-3-03

- [NA KL 2-3-03] TPR-1666, TRUPACT-II Loading Operation in WMF-635
- [ ] TPR-1649, TRUPACT-II Loading Operation in WMF-618
- [ ] TRUPACT-II Maintenance Record Form
- [ ] PATCDs
- [ ] SWB Assembly Details Report(s)
- [NA KL 2-3-03] Container, Pack, TRUPACT, and Shipment Association Form/Report (Final Load Check)

OF Signature: [signature] Date: 2-3-03

Comments: SWB'S ASSEMBLED USING TPR-1233

C-175

IA1

OPERATIONS DOCUMENT CHECKLIST FOR FIELD PACK FILE/TRUPACT LOADING FILE

PAYLOAD ASSEMBLY OPERATIONS

Pack No. and/or SWB No. IDRFXW1B030001
IDRFXW1B030002

Check or N/A

- [NA] LLL 2-13-03 Payload Assembly, 14-Pack Layout Report(s)
- [ ] Payload Disassembly, 14-Pack Layout Report(s)
- [ ] TPR-1648, TRUPACT-II Payload Assembly Operation
- [ ] SWB Assembly Details Report(s)
- [ ] Shipments, Packs, And Subassemblies
- [NA] LLL 2-3-03 Copy of NCR Report
- [✓] Copy of Radiological Survey Report(s)

TRUPACT LOADING OPERATIONS

TRUPACT-II(s) NA LLL 2-3-03

- [NA] LLL 2-3-03 TPR-1666, TRUPACT-II Loading Operation in WMF-635
- [ ] TPR-1649, TRUPACT-II Loading Operation in WMF-618
- [ ] TRUPACT-II Maintenance Record Form
- [ ] PATCDs
- [ ] SWB Assembly Details Report(s)
- [ ] Container, Pack, TRUPACT, and Shipment Association Form/Report (Final Load Check)

NA LLL 2-3-03

OF Signature: [signature] Date: 2-3-03

Comments: SWB'S ASSEMBLED USING TPR-6233

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07/17/2001
Rev. 02

RADIOACTIVE MATERIAL PACKAGING QUALITY CONTROL INSPECTION

sk or Container Serial Number: IDRFXWB030001

Cask Approved for INEEL Use Only: N/A

DOT Specification or Certificate of Compliance No.: N/A

Expiration Date: N/A

Shipment No.: RW03003

Shipping Date: 2/4/2003

This checklist is to ensure that the above reference shipping container meets the applicable DOE or DOT design standards.

		YES	NO	NA
a.	The packaging is proper for the contents to be shipped:	☒	☐	
b.	The packaging is in unimpaired physical condition, except for superficial marks:	☒	☐	
c.	Each closure device of the packaging, including any required gasket, is properly installed, secured, and free of defects:	☒	☐	
d.	For fissile material, each moderator and neutron absorber, if required, is present and in proper condition:	☐	☐	☒
e.	Each special instruction for filling, closing, and preparing the package for shipment has been followed:	☒	☐	☐
f.	Each closure, valve or other opening of the containment system through which the radioactive content might escape is properly closed and sealed:	☒	☐	
g.	Each packaging containing liquid in excess of an A_2 quantity and intended for air shipment has been tested to show that it will not leak under an ambient atmospheric pressure of not more than 0.25 atmosphere, absolute (0.25 kilograms per square centimeter or 3.6 psia). The test must be conducted on the entire containment system, or any receptacle or vessel within the containment system, to determine compliance with this requirement:	☐	☐	☒
h.	The internal pressure of the containment system will not exceed the design pressure during transportation:	☒	☐	☐

Michael D. Griffin	Michael D. Griffin	2/3/2003
Container Inspector (Name)	Container Inspector (Signature)	Date

461.02
07/17/2001
Rev. 02

RADIOACTIVE MATERIAL PACKAGING QUALITY CONTROL INSPECTION

sk or Container Serial Number: IDRFXWB030002

Cask Approved for INEEL Use Only: N/A

DOT Specification or Certificate of Compliance No.: N/A

Expiration Date: N/A Shipment No.: RW03003

Shipping Date: 2/4/2003

This checklist is to ensure that the above reference shipping container meets the applicable DOE or DOT design standards.

		YES	NO	NA
a.	The packaging is proper for the contents to be shipped:	☒	☐	
b.	The packaging is in unimpaired physical condition, except for superficial marks:	☒	☐	
c.	Each closure device of the packaging, including any required gasket, is properly installed, secured, and free of defects:	☒	☐	
d.	For fissile material, each moderator and neutron absorber, if required, is present and in proper condition:	☐	☐	☒
e.	Each special instruction for filling, closing, and preparing the package for shipment has been followed:	☒	☐	☐
f.	Each closure, valve or other opening of the containment system through which the radioactive content might escape is properly closed and sealed:	☒	☐	
g.	Each packaging containing liquid in excess of an A_2 quantity and intended for air shipment has been tested to show that it will not leak under an ambient atmospheric pressure of not more than 0.25 atmosphere, absolute (0.25 kilograms per square centimeter or 3.6 psia). The test must be conducted on the entire containment system, or any receptacle or vessel within the containment system, to determine compliance with this requirement:	☐	☐	☒
h.	The internal pressure of the containment system will not exceed the design pressure during transportation:	☒	☐	☐

Michael D. Griffin	Michael D. Griffin	2/3/2003
Container Inspector (Name)	Container Inspector (Signature)	Date

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07/17/2001
Rev. 02

RADIOACTIVE MATERIAL PACKAGING QUALITY CONTROL INSPECTION

sk or Container Serial Number: IDRFXWB030003

Cask Approved for INEEL Use Only: N/A

DOT Specification or Certificate of Compliance No.: N/A

Expiration Date: N/A Shipment No.: RW03003

Shipping Date: 2/4/2003

This checklist is to ensure that the above reference shipping container meets the applicable DOE or DOT design standards.

		YES	NO	NA
a.	The packaging is proper for the contents to be shipped:	☒	☐	
b.	The packaging is in unimpaired physical condition, except for superficial marks:	☒	☐	
c.	Each closure device of the packaging, including any required gasket, is properly installed, secured, and free of defects:	☒	☐	
d.	For fissile material, each moderator and neutron absorber, if required, is present and in proper condition:	☐	☐	☒
e.	Each special instruction for filling, closing, and preparing the package for shipment has been followed:	☒	☐	☐
f.	Each closure, valve or other opening of the containment system through which the radioactive content might escape is properly closed and sealed:	☒	☐	
g.	Each packaging containing liquid in excess of an A_2 quantity and intended for air shipment has been tested to show that it will not leak under an ambient atmospheric pressure of not more than 0.25 atmosphere, absolute (0.25 kilograms per square centimeter or 3.6 psia). The test must be conducted on the entire containment system, or any receptacle or vessel within the containment system, to determine compliance with this requirement:	☐	☐	☒
h.	The internal pressure of the containment system will not exceed the design pressure during transportation:	☒	☐	☐

Michael D. Griffin	Michael D. Griffin	2/3/2003
Container Inspector (Name)	Container Inspector (Signature)	Date

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07/17/2001
Rev. 02

RADIOACTIVE MATERIAL PACKAGING QUALITY CONTROL INSPECTION

sk or Container Serial Number: IDRFXWB030004

Cask Approved for INEEL Use Only: N/A

DOT Specification or Certificate of Compliance No.: N/A

Expiration Date: N/A Shipment No.: RW03003

Shipping Date: 2/4/2003

This checklist is to ensure that the above reference shipping container meets the applicable DOE or DOT design standards.

		YES	NO	NA
a.	The packaging is proper for the contents to be shipped:	☒	☐	
b.	The packaging is in unimpaired physical condition, except for superficial marks:	☒	☐	
c.	Each closure device of the packaging, including any required gasket, is properly installed, secured, and free of defects:	☒	☐	
d.	For fissile material, each moderator and neutron absorber, if required, is present and in proper condition:	☐	☐	☒
e.	Each special instruction for filling, closing, and preparing the package for shipment has been followed:	☒	☐	☐
f.	Each closure, valve or other opening of the containment system through which the radioactive content might escape is properly closed and sealed:	☒	☐	
g.	Each packaging containing liquid in excess of an A_2 quantity and intended for air shipment has been tested to show that it will not leak under an ambient atmospheric pressure of not more than 0.25 atmosphere, absolute (0.25 kilograms per square centimeter or 3.6 psia). The test must be conducted on the entire containment system, or any receptacle or vessel within the containment system, to determine compliance with this requirement:	☐	☐	☒
h.	The internal pressure of the containment system will not exceed the design pressure during transportation:	☒	☐	☐

Michael D. Griffin	Michael D. Griffin	2/3/2003
Container Inspector (Name)	Container Inspector (Signature)	Date

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07/17/2001
Rev. 02

RADIOACTIVE MATERIAL PACKAGING QUALITY CONTROL INSPECTION

sk or Container Serial Number: IDRFXWB030005

Cask Approved for INEEL Use Only: N/A

DOT Specification or Certificate of Compliance No.: N/A

Expiration Date: N/A

Shipment No.: RW03003

Shipping Date: 2/4/2003

This checklist is to ensure that the above reference shipping container meets the applicable DOE or DOT design standards.

		YES	NO	NA
a.	The packaging is proper for the contents to be shipped:	☒	☐	
b.	The packaging is in unimpaired physical condition, except for superficial marks:	☒	☐	
c.	Each closure device of the packaging, including any required gasket, is properly installed, secured, and free of defects:	☒	☐	
d.	For fissile material, each moderator and neutron absorber, if required, is present and in proper condition:	☐	☐	☒
e.	Each special instruction for filling, closing, and preparing the package for shipment has been followed:	☒	☐	☐
f.	Each closure, valve or other opening of the containment system through which the radioactive content might escape is properly closed and sealed:	☒	☐	
g.	Each packaging containing liquid in excess of an A_2 quantity and intended for air shipment has been tested to show that it will not leak under an ambient atmospheric pressure of not more than 0.25 atmosphere, absolute (0.25 kilograms per square centimeter or 3.6 psia). The test must be conducted on the entire containment system, or any receptacle or vessel within the containment system, to determine compliance with this requirement:	☐	☐	☒
h.	The internal pressure of the containment system will not exceed the design pressure during transportation:	☒	☐	☐

Michael D. Griffin	Michael D. Griffin	2/3/2003
Container Inspector (Name)	Container Inspector (Signature)	Date

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07/17/2001
Rev. 02

RADIOACTIVE MATERIAL PACKAGING QUALITY CONTROL INSPECTION

sk or Container Serial Number: IDRFXWB030006

Cask Approved for INEEL Use Only: N/A

DOT Specification or Certificate of Compliance No.: N/A

Expiration Date: N/A

Shipment No.: RW03003

Shipping Date: 2/4/2003

This checklist is to ensure that the above reference shipping container meets the applicable DOE or DOT design standards.

		YES	NO	NA
a.	The packaging is proper for the contents to be shipped:	☒	☐	
b.	The packaging is in unimpaired physical condition, except for superficial marks:	☒	☐	
c.	Each closure device of the packaging, including any required gasket, is properly installed, secured, and free of defects:	☒	☐	
d.	For fissile material, each moderator and neutron absorber, if required, is present and in proper condition:	☐	☐	☒
e.	Each special instruction for filling, closing, and preparing the package for shipment has been followed:	☒	☐	☐
f.	Each closure, valve or other opening of the containment system through which the radioactive content might escape is properly closed and sealed:	☒	☐	
g.	Each packaging containing liquid in excess of an A_2 quantity and intended for air shipment has been tested to show that it will not leak under an ambient atmospheric pressure of not more than 0.25 atmosphere, absolute (0.25 kilograms per square centimeter or 3.6 psia). The test must be conducted on the entire containment system, or any receptacle or vessel within the containment system, to determine compliance with this requirement:	☐	☐	☒
h.	The internal pressure of the containment system will not exceed the design pressure during transportation:	☒	☐	☐

Michael D. Griffin		2/3/2003
Container Inspector (Name)	Container Inspector (Signature)	Date

461.02
07/17/2001
Rev. 02

RADIOACTIVE MATERIAL PACKAGING QUALITY CONTROL INSPECTION

sk or Container Serial Number: IDRFXWB030007

Cask Approved for INEEL Use Only: N/A

DOT Specification or Certificate of Compliance No.: N/A

Expiration Date: N/A Shipment No.: RW03003

Shipping Date: 2/4/2003

This checklist is to ensure that the above reference shipping container meets the applicable DOE or DOT design standards.

		YES	NO	NA
a.	The packaging is proper for the contents to be shipped:	☒	☐	
b.	The packaging is in unimpaired physical condition, except for superficial marks:	☒	☐	
c.	Each closure device of the packaging, including any required gasket, is properly installed, secured, and free of defects:	☒	☐	
d.	For fissile material, each moderator and neutron absorber, if required, is present and in proper condition:	☐	☐	☒
e.	Each special instruction for filling, closing, and preparing the package for shipment has been followed:	☒	☐	☐
f.	Each closure, valve or other opening of the containment system through which the radioactive content might escape is properly closed and sealed:	☒	☐	
g.	Each packaging containing liquid in excess of an A_2 quantity and intended for air shipment has been tested to show that it will not leak under an ambient atmospheric pressure of not more than 0.25 atmosphere, absolute (0.25 kilograms per square centimeter or 3.6 psia). The test must be conducted on the entire containment system, or any receptacle or vessel within the containment system, to determine compliance with this requirement:	☐	☐	☒
h.	The internal pressure of the containment system will not exceed the design pressure during transportation:	☒	☐	☐

Michael D. Griffin	Michael D. Griffin	2/3/2003
Container Inspector (Name)	Container Inspector (Signature)	Date

WIPP Waste Information System
Waste Container Data Report

Report	*RP0360*
Version	*1.8*
Instance	*TST01*
Run by	*OFFNERS*
Report Date	*01/20/2003 08:39*
Total Pages	*4*

Selection Criteria -

Container Number	***IDRFXWB030005***
Site Id	**%**
Waste Stream	**%**
Data Status Code	**%**

Waste Container Data Report

Container Number : **IDRFXWB030005**
Site ID : **IN - IDAHO NATIONAL ENGINEERING LAB**
Data Status Code : **Pending Certification Data Approval by WIPP**
Waste Stream Profile : **INW216.001**
Container Type : **14 - SWB - USED TO OVERPACK 4 - 55 GAL. DRUMS IN GOOD CONDITION**

Waste Container Information

WAC Ex. # :
WAC Rev # : **0**
Cert Date : **01/16/2003**
Cert Site : **IN - IDAHO NATIONAL ENGINEERING**
Generator Site : **RF - ROCKY FLATS**
IDC Code : **002**
Matrix Code : **S3121**
TRUCON Code : **ID211A**
Shipping Category : **1001300250**
PCB Conc (ppm) : **0**
Decay Heat (watts) : **4.687E-03**
Decay Heat Uncert (watts) : **2.118E-03**
Closure Date : **01/04/1973**
Vent Date : **12/07/1987**
Aspiration Method ID : **3**
Gas Gen Rate :
Gas Hyd Meth Gen Rate :
Gas Gen Comp Date :
Shipment Num :
Packaging Num :
Assembly ID :
Container Disposal Date :
Container Status Code : **PRE**

It can be established through process knowledge that the concentration of flammable VOCs present in the headspace of this container is <= 500ppm: **N**

Handling Code : **CH**
Waste Type: **MTRU**
Waste Stream BIR ID : **IN-W228**
Waste Stream MWIR ID : **IN-W228**
TRU Alpha Act (Ci) : **1.432E-01**
TRU Alpha Act Uncert (Ci) : **6.472E-02**
TRU Alpha Act Conc (Ci/g) : **6.203E-07**
TRU Alpha Act Conc Uncert (Ci/g) : **2.809E-07**
Pu239 Eq Act (PE Ci) : **1.431E-01**
Pu239 Fiss Gm Eq (FGE) : **1.300E+00**
Pu239 Fiss Gm Eq Uncert (FGE) : **5.900E-01**
Layers of Packaging : **0**
Fill Factor (%) : **11**
Liner Exists : **Y**
Liner Hole Size (mm) : **7.62**
Gross Weight (kg) : **641.9**
Gross Weight Uncert (kg) : **2.2**
Alpha Surf Cont (dpm/100cm2) : **0**
BG Surf Cont (dpm/100cm2) : **0**
BG Dose Rate (mrem/hr) : **.2**
Neut Dose Rate (mrem/hr) : **0**
Total Dose Rate (mrem/hr) : **.2**
Overpack Cntr Num :
Overpack Cntr Type :

Inner Container Information

Container Number	Container Type
IDRF074221338	18 - 55 GAL DRUM TO BE OVERPACKED - SOLID/VITRIFIED - GOOD

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Waste Container Data Report

Container Number : **IDRFXWB030005**
Site ID : **IN - IDAHO NATIONAL ENGINEERING LAB**
Data Status Code : **Pending Certification Data Approval by WIPP**
Waste Stream Profile : **INW216.001**
Container Type : **14 - SWB - USED TO OVERPACK 4 - 55 GAL. DRUMS IN GOOD CONDITION**

Nuclide Information

Radionuclide	Description	Activity (Ci)	Activity Uncert (Ci)	Mass (g)	Mass Uncert (g)	List
AM-241	AMERICIUM 241	9.809E-02	4.439E-02	2.827E-02	1.279E-02	Y
CS-137	CESIUM 137	.000E+00	.000E+00	.000E+00	.000E+00	Y
PU-238	PLUTONIUM 238	1.106E-03	6.599E-04	6.392E-05	3.814E-05	Y
PU-239	PLUTONIUM 239	3.601E-02	1.625E-02	5.726E-01	2.584E-01	Y
PU-240	PLUTONIUM 240	8.008E-03	3.676E-03	3.482E-02	1.598E-02	Y
PU-241	PLUTONIUM 241	1.095E-01	5.342E-02	1.053E-03	5.136E-04	Y
PU-242	PLUTONIUM 242	1.039E-06	7.089E-07	2.617E-04	1.786E-04	Y
SR-90	STRONTIUM 90	.000E+00	.000E+00	.000E+00	.000E+00	Y
U-233	URANIUM 233	.000E+00	.000E+00	.000E+00	.000E+00	
U-234	URANIUM 234	9.272E-06	5.358E-06	1.467E-03	8.478E-04	Y
U-235	URANIUM 235	1.582E-06	7.143E-07	7.223E-01	3.261E-01	Y
U-238	URANIUM 238	7.071E-05	3.352E-05	2.080E+02	9.857E+01	Y

Material Parameters Information

Waste Matl Parm	Description	Weight (kg)
1	IRON BASE METAL ALLOYS	26.76
4	OTHER INORGANIC MATERIALS	29.03
8	PLASTICS	7.71
9	SOLIDIFIED INORGANIC MATERIAL	201.40
13	STEEL CONTAINER MATERIALS	377.00

Filter Model Information

Filter Model	Description	Quantity	Install Date
NF013	NUCFIL CARBON COMPOSIT	4	01/16/2003

Assay Methods Information

See Assay Methods Information for Inner containers.

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Waste Container Data Report

Container Number :	**IDRFXWB030005**
Site ID :	**IN - IDAHO NATIONAL ENGINEERING LAB**
Data Status Code :	**Pending Certification Data Approval by WIPP**
Waste Stream Profile :	**INW216.001**
Container Type :	**14 - SWB - USED TO OVERPACK 4 - 55 GAL. DRUMS IN GOOD CONDITION**

Characterization Methods Information

See Characterization Methods Information for Inner containers.

Hazardous Code Information

Haz Code	Description
D004	ARSENIC
D005	BARIUM
D006	CADMIUM
D007	CHROMIUM
D008	LEAD
D009	MERCURY
D010	SELENIUM
D011	SILVER
D022	CHLOROFORM
F001	SPENT HALOGENATED SOLVENTS
F002	SPENT HALOGENATED SOLVENTS
F005	SPENT NON-HALOGENATED SOLVENTS
F006	WASTEWATER TREATMENT SLUDGE
F007	SPENT CYANIDE PLATING BATH
F009	SPENT STRIPPING SOLUTION

Sample Information

See Sample Information for Inner containers.

WIPP Waste Information System
Waste Container Data Report

Report	*RP0360*
Version	*1.8*
Instance	*TST01*
Run by	*OFFNERS*
Report Date	*01/20/2003 08:40*
Total Pages	*4*

Selection Criteria -

Container Number	***IDRFXWB030006***
Site Id	**%**
Waste Stream	**%**
Data Status Code	**%**

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Waste Container Data Report

Container Number : **IDRFXWB030006**
Site ID : **IN - IDAHO NATIONAL ENGINEERING LAB**
Data Status Code : **Pending Certification Data Approval by WIPP**
Waste Stream Profile : **INW218.001**
Container Type : **14 - SWB - USED TO OVERPACK 4 - 55 GAL. DRUMS IN GOOD CONDITION**

Waste Container Information

WAC Ex. # :
WAC Rev # : **0**
Cert Date : **01/16/2003**
Cert Site : **IN - IDAHO NATIONAL ENGINEERING**
Generator Site : **RF - ROCKY FLATS**
IDC Code : **007**
Matrix Code : **S3121**
TRUCON Code : **ID211A**
Shipping Category : **1001300250**
PCB Conc (ppm) : **0**
Decay Heat (watts) : **1.241E-02**
Decay Heat Uncert (watts) : **4.945E-03**
Closure Date : **01/17/1983**
Vent Date : **07/11/1989**
Aspiration Method ID : **3**
Gas Gen Rate :
Gas Hyd Meth Gen Rate :
Gas Gen Comp Date :
Shipment Num :
Packaging Num :
Assembly ID :
Container Disposal Date :
Container Status Code : **PRE**

Handling Code : **CH**
Waste Type: **MTRU**
Waste Stream BIR ID : **IN-W218**
Waste Stream MWIR ID : **IN-W218**
TRU Alpha Act (Ci) : **3.795E-01**
TRU Alpha Act Uncert (Ci) : **1.509E-01**
TRU Alpha Act Conc (Ci/g) : **7.945E-07**
TRU Alpha Act Conc Uncert (Ci/g) : **6.444E-07**
Pu239 Eq Act (PE Ci) : **3.792E-01**
Pu239 Fiss Gm Eq (FGE) : **2.570E+00**
Pu239 Fiss Gm Eq Uncert (FGE) : **9.508E-01**
Layers of Packaging : **0**
Fill Factor (%) : **19**
Liner Exists : **Y**
Liner Hole Size (mm) : **7.62**
Gross Weight (kg) : **893.67**
Gross Weight Uncert (kg) : **2.16**
Alpha Surf Cont (dpm/100cm2) : **0**
BG Surf Cont (dpm/100cm2) : **0**
BG Dose Rate (mrem/hr) : **0**
Neut Dose Rate (mrem/hr) : **0**
Total Dose Rate (mrem/hr) : **0**
Overpack Cntr Num :
Overpack Cntr Type :

It can be established through process knowledge that the concentration of flammable VOCs present in the headspace of this container is <= 500ppm: **N**

Inner Container Information

Container Number	Container Type
IDRF074700411	18 - 55 GAL DRUM TO BE OVERPACKED - SOLID/VITRIFIED - GOOD
IDRF074700394	18 - 55 GAL DRUM TO BE OVERPACKED - SOLID/VITRIFIED - GOOD

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Waste Container Data Report

Container Number : **IDRFXWB030006**
Site ID : **IN - IDAHO NATIONAL ENGINEERING LAB**
Data Status Code : **Pending Certification Data Approval by WIPP**
Waste Stream Profile : **INW218.001**
Container Type : **14 - SWB - USED TO OVERPACK 4 - 55 GAL. DRUMS IN GOOD CONDITION**

Nuclide Information

Radionuclide	Description	Activity (Ci)	Activity Uncert (Ci)	Mass (g)	Mass Uncert (g)	List
AM-241	AMERICIUM 241	2.549E-01	1.068E-01	7.347E-02	3.079E-02	Y
CS-137	CESIUM 137	.000E+00	.000E+00	.000E+00	.000E+00	Y
PU-238	PLUTONIUM 238	3.051E-03	1.482E-03	1.764E-04	8.568E-05	Y
PU-239	PLUTONIUM 239	9.938E-02	3.600E-02	1.580E+00	5.724E-01	Y
PU-240	PLUTONIUM 240	2.210E-02	8.153E-03	9.608E-02	3.545E-02	Y
PU-241	PLUTONIUM 241	3.022E-01	1.189E-01	2.906E-03	1.143E-03	Y
PU-242	PLUTONIUM 242	2.867E-06	1.599E-06	7.223E-04	4.028E-04	Y
SR-90	STRONTIUM 90	.000E+00	.000E+00	.000E+00	.000E+00	Y
U-233	URANIUM 233	.000E+00	.000E+00	.000E+00	.000E+00	
U-234	URANIUM 234	1.446E-05	5.950E-06	2.289E-03	9.414E-04	Y
U-235	URANIUM 235	2.163E-06	8.208E-07	9.876E-01	3.748E-01	Y
U-238	URANIUM 238	1.256E-04	4.807E-05	3.695E+02	1.414E+02	Y

Material Parameters Information

Waste Matl Parm	Description	Weight (kg)
1	IRON BASE METAL ALLOYS	53.52
4	OTHER INORGANIC MATERIALS	72.57
8	PLASTICS	19.06
9	SOLIDIFIED INORGANIC MATERIAL	400.52
13	STEEL CONTAINER MATERIALS	348.00

Filter Model Information

Filter Model	Description	Quantity	Install Date
NF013	NUCFIL CARBON COMPOSIT	4	01/16/2003

Assay Methods Information

See Assay Methods Information for Inner containers.

Waste Container Data Report

Container Number :	**IDRFXWB030006**
Site ID :	**IN - IDAHO NATIONAL ENGINEERING LAB**
Data Status Code :	**Pending Certification Data Approval by WIPP**
Waste Stream Profile :	**INW218.001**
Container Type :	**14 - SWB - USED TO OVERPACK 4 - 55 GAL. DRUMS IN GOOD CONDITION**

Characterization Methods Information

See Characterization Methods Information for Inner containers.

Hazardous Code Information

Haz Code	Description
D006	CADMIUM
D007	CHROMIUM
D008	LEAD
D009	MERCURY
D010	SELENIUM
D011	SILVER
D032	HEXACHLOROBENZENE
F001	SPENT HALOGENATED SOLVENTS
F002	SPENT HALOGENATED SOLVENTS
F005	SPENT NON-HALOGENATED SOLVENTS
F006	WASTEWATER TREATMENT SLUDGE
F007	SPENT CYANIDE PLATING BATH
F009	SPENT STRIPPING SOLUTION

Sample Information

See Sample Information for Inner containers.

Waste Information System
Waste Container Data Report

Report	*RP0360*
Version	*1.8*
Instance	*TST01*
Run by	*OFFNERS*
Report Date	*01/20/2003 08:36*
Total Pages	*4*

Selection Criteria -

Container Number	***IDRFXWB030001***
Site Id	**%**
Waste Stream	**%**
Data Status Code	**%**

...te Container Data Report

Conta... IDRFXWB030001
Site ID : IN - IDAHO NATIONAL ENGINEERING LAB
Data Status Code : Pending Certification Data Approval by WIPP
Waste Stream Profile : INW211.001
Container Type : 14 - SWB - USED TO OVERPACK 4 - 55 GAL. DRUMS IN GOOD CONDITION

Waste Container Information

WAC Ex. # :
WAC Rev # : 0
Cert Date : 01/16/2003
Cert Site : IN - IDAHO NATIONAL ENGINEERING
Generator Site : RF - ROCKY FLATS
IDC Code : 376
Matrix Code : S5410
TRUCON Code : ID219A
Shipping Category : 3001090568
PCB Conc (ppm) : 0
Decay Heat (watts) : 4.651E-01
Decay Heat Uncert (watts) : 3.457E-02
Closure Date : 06/07/1984
Vent Date : 11/16/2001
Aspiration Method ID : 3
Gas Gen Rate :
Gas Hyd Meth Gen Rate :
Gas Gen Comp Date :
Shipment Num :
Packaging Num :
Assembly ID :
Container Disposal Date :
Container Status Code : PRE

Handling Code : CH
Waste Type: MTRU
Waste Stream BIR ID : N/A
Waste Stream MWIR ID : N/A
TRU Alpha Act (Ci) : 1.484E+01
TRU Alpha Act Uncert (Ci) : 1.110E+00
TRU Alpha Act Conc (Ci/g) : 1.404E-04
TRU Alpha Act Conc Uncert (Ci/g) : 4.251E-05
Pu239 Eq Act (PE Ci) : 1.481E+01
Pu239 Fiss Gm Eq (FGE) : 1.744E+02
Pu239 Fiss Gm Eq Uncert (FGE) : 1.671E+01
Layers of Packaging : 2
Fill Factor (%) : 36
Liner Exists : Y
Liner Hole Size (mm) : 7.62
Gross Weight (kg) : 534.02
Gross Weight Uncert (kg) : 2.08
Alpha Surf Cont (dpm/100cm2) : 0
BG Surf Cont (dpm/100cm2) : 0
BG Dose Rate (mrem/hr) : 2
Neut Dose Rate (mrem/hr) : 2
Total Dose Rate (mrem/hr) : 4
Overpack Cntr Num :
Overpack Cntr Type :

It can be established through process knowledge that the concentration of flammable VOCs present in the headspace of this container is <= 500ppm: N

Inner Container Information

Container Number	Container Type
IDRF004102254	16 - 55 GAL DRUM TO BE OVERPACKED - GOOD CONDITION
IDRF004101890	16 - 55 GAL DRUM TO BE OVERPACKED - GOOD CONDITION
IDRF004002801	16 - 55 GAL DRUM TO BE OVERPACKED - GOOD CONDITION
IDRF004102263	16 - 55 GAL DRUM TO BE OVERPACKED - GOOD CONDITION

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ste Container Data Report

Conta: **IDRFXWB030001**
Site ID : **IN - IDAHO NATIONAL ENGINEERING LAB**
Data Status Code : **Pending Certification Data Approval by WIPP**
Waste Stream Profile : **INW211.001**
Container Type : **14 - SWB - USED TO OVERPACK 4 - 55 GAL. DRUMS IN GOOD CONDITION**

Nuclide Information

Radionuclide	Description	Activity (Ci)	Activity Uncert (Ci)	Mass (g)	Mass Uncert (g)	List
AM-241	AMERICIUM 241	1.188E+00	2.399E-01	3.423E-01	6.915E-02	Y
CS-137	CESIUM 137	.000E+00	.000E+00	.000E+00	.000E+00	Y
PU-238	PLUTONIUM 238	3.357E-01	7.347E-02	1.941E-02	4.247E-03	Y
PU-239	PLUTONIUM 239	1.090E+01	1.051E+00	1.733E+02	1.671E+01	Y
PU-240	PLUTONIUM 240	2.415E+00	2.541E-01	1.050E+01	1.105E+00	Y
PU-241	PLUTONIUM 241	3.316E+01	4.429E+00	3.188E-01	4.258E-02	Y
PU-242	PLUTONIUM 242	3.164E-04	8.801E-05	7.970E-02	2.217E-02	Y
SR-90	STRONTIUM 90	.000E+00	.000E+00	.000E+00	.000E+00	Y
U-233	URANIUM 233	.000E+00	.000E+00	.000E+00	.000E+00	
U-234	URANIUM 234	.000E+00	.000E+00	.000E+00	.000E+00	
U-235	URANIUM 235	.000E+00	.000E+00	.000E+00	.000E+00	
U-238	URANIUM 238	.000E+00	.000E+00	.000E+00	.000E+00	

Material Parameters Information

Waste Matl Parm	Description	Weight (kg)
1	IRON BASE METAL ALLOYS	107.04
2	ALUMINUM BASE METAL/ALLOYS	9.89
4	OTHER INORGANIC MATERIALS	2.04
6	CELLULOSICS	92.74
8	PLASTICS	32.31
13	STEEL CONTAINER MATERIALS	290.00

Filter Model Information

Filter Model	Description	Quantity	Install Date
NF013	NUCFIL CARBON COMPOSIT	4	01/16/2003

Assay Methods Information

See Assay Methods Information for Inner containers.

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.ste Container Data Report

Container :	**IDRFXWB030001**
Site ID :	**IN - IDAHO NATIONAL ENGINEERING LAB**
Data Status Code :	**Pending Certification Data Approval by WIPP**
Waste Stream Profile :	**INW211.001**
Container Type :	**14 - SWB - USED TO OVERPACK 4 - 55 GAL. DRUMS IN GOOD CONDITION**

Characterization Methods Information

See Characterization Methods Information for Inner containers.

Hazardous Code Information

Haz Code	Description
D005	BARIUM
D007	CHROMIUM
D008	LEAD
D009	MERCURY
D011	SILVER
D022	CHLOROFORM
F001	SPENT HALOGENATED SOLVENTS
F002	SPENT HALOGENATED SOLVENTS
F005	SPENT NON-HALOGENATED SOLVENTS
F006	WASTEWATER TREATMENT SLUDGE
F007	SPENT CYANIDE PLATING BATH
F009	SPENT STRIPPING SOLUTION

Sample Information

See Sample Information for Inner containers.

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WIPP Waste Information System
Waste Container Data Report

Report	*RP0360*
Version	*1.8*
Instance	*TST01*
Run by	*OFFNERS*
Report Date	*01/20/2003 08:37*
Total Pages	*4*

Selection Criteria -

Container Number	***IDRFXWB030002***
Site Id	**%**
Waste Stream	**%**
Data Status Code	**%**

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Waste Container Data Report

Container Number : **IDRFXWB030002**
Site ID : **IN - IDAHO NATIONAL ENGINEERING LAB**
Data Status Code : **Pending Certification Data Approval by WIPP**
Waste Stream Profile : **INW211.001**
Container Type : **14 - SWB - USED TO OVERPACK 4 - 55 GAL. DRUMS IN GOOD CONDITION**

Waste Container Information

WAC Ex. # :
WAC Rev # : **0**
Cert Date : **01/16/2003**
Cert Site : **IN - IDAHO NATIONAL ENGINEERING**
Generator Site : **RF - ROCKY FLATS**
IDC Code : **376**
Matrix Code : **S5410**
TRUCON Code : **ID219A**
Shipping Category : **3001090568**
PCB Conc (ppm) : **0**
Decay Heat (watts) : **1.157E-01**
Decay Heat Uncert (watts) : **1.688E-02**
Closure Date : **10/21/1986**
Vent Date : **01/20/2001**
Aspiration Method ID : **3**
Gas Gen Rate :
Gas Hyd Meth Gen Rate :
Gas Gen Comp Date :
Shipment Num :
Packaging Num :
Assembly ID :
Container Disposal Date :
Container Status Code : **PRE**

Handling Code : **CH**
Waste Type: **MTRU**
Waste Stream BIR ID : **N/A**
Waste Stream MWIR ID : **N/A**
TRU Alpha Act (Ci) : **3.690E+00**
TRU Alpha Act Uncert (Ci) : **5.422E-01**
TRU Alpha Act Conc (Ci/g) : **9.684E-05**
TRU Alpha Act Conc Uncert (Ci/g) : **1.423E-05**
Pu239 Eq Act (PE Ci) : **3.682E+00**
Pu239 Fiss Gm Eq (FGE) : **4.282E+01**
Pu239 Fiss Gm Eq Uncert (FGE) : **8.180E+00**
Layers of Packaging : **1**
Fill Factor (%) : **11**
Liner Exists : **Y**
Liner Hole Size (mm) : **7.62**
Gross Weight (kg) : **449.57**
Gross Weight Uncert (kg) : **2.2**
Alpha Surf Cont (dpm/100cm2) : **0**
BG Surf Cont (dpm/100cm2) : **0**
BG Dose Rate (mrem/hr) : **3**
Neut Dose Rate (mrem/hr) : **0**
Total Dose Rate (mrem/hr) : **3**
Overpack Cntr Num :
Overpack Cntr Type :

It can be established through process knowledge that the concentration of flammable VOCs present in the headspace of this container is <= 500ppm: **N**

Inner Container Information

Container Number	Container Type
IDRF004002790	16 - 55 GAL DRUM TO BE OVERPACKED - GOOD CONDITION

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Waste Container Data Report

Container Number : **IDRFXWB030002**
Site ID : **IN - IDAHO NATIONAL ENGINEERING LAB**
Data Status Code : **Pending Certification Data Approval by WIPP**
Waste Stream Profile : **INW211.001**
Container Type : **14 - SWB - USED TO OVERPACK 4 - 55 GAL. DRUMS IN GOOD CONDITION**

Nuclide Information

Radionuclide	Description	Activity (Ci)	Activity Uncert (Ci)	Mass (g)	Mass Uncert (g)	List
AM-241	AMERICIUM 241	3.394E-01	1.120E-01	9.781E-02	3.226E-02	Y
CS-137	CESIUM 137	.000E+00	.000E+00	.000E+00	.000E+00	Y
PU-238	PLUTONIUM 238	8.240E-02	3.604E-02	4.763E-03	2.083E-03	Y
PU-239	PLUTONIUM 239	2.675E+00	5.145E-01	4.253E+01	8.179E+00	Y
PU-240	PLUTONIUM 240	5.928E-01	1.244E-01	2.577E+00	5.410E-01	Y
PU-241	PLUTONIUM 241	8.138E+00	2.170E+00	7.825E-02	2.087E-02	Y
PU-242	PLUTONIUM 242	7.767E-05	4.319E-05	1.956E-02	1.088E-02	Y
SR-90	STRONTIUM 90	.000E+00	.000E+00	.000E+00	.000E+00	Y
U-233	URANIUM 233	.000E+00	.000E+00	.000E+00	.000E+00	
U-234	URANIUM 234	.000E+00	.000E+00	.000E+00	.000E+00	
U-235	URANIUM 235	.000E+00	.000E+00	.000E+00	.000E+00	
U-238	URANIUM 238	.000E+00	.000E+00	.000E+00	.000E+00	

Material Parameters Information

Waste Matl Parm	Description	Weight (kg)
1	IRON BASE METAL ALLOYS	26.76
2	ALUMINUM BASE METAL/ALLOYS	3.81
6	CELLULOSICS	34.29
8	PLASTICS	7.71
13	STEEL CONTAINER MATERIALS	377.00

Filter Model Information

Filter Model	Description	Quantity	Install Date
NF013	NUCFIL CARBON COMPOSIT	4	01/16/2003

Assay Methods Information

See Assay Methods Information for Inner containers.

Waste Container Data Report

Container Number :	**IDRFXWB030002**
Site ID :	**IN - IDAHO NATIONAL ENGINEERING LAB**
Data Status Code :	**Pending Certification Data Approval by WIPP**
Waste Stream Profile :	**INW211.001**
Container Type :	**14 - SWB - USED TO OVERPACK 4 - 55 GAL. DRUMS IN GOOD CONDITION**

Characterization Methods Information

See Characterization Methods Information for Inner containers.

Hazardous Code Information

Haz Code	Description
D005	BARIUM
D007	CHROMIUM
D008	LEAD
D009	MERCURY
D011	SILVER
D022	CHLOROFORM
F001	SPENT HALOGENATED SOLVENTS
F002	SPENT HALOGENATED SOLVENTS
F005	SPENT NON-HALOGENATED SOLVENTS
F006	WASTEWATER TREATMENT SLUDGE
F007	SPENT CYANIDE PLATING BATH
F009	SPENT STRIPPING SOLUTION

Sample Information

See Sample Information for Inner containers.

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WIPP Waste Information System
Waste Container Data Report

Report	*RP0360*
Version	*1.8*
Instance	*TST01*
Run by	*OFFNERS*
Report Date	*01/20/2003 08:38*
Total Pages	*4*

Selection Criteria -

Container Number	***IDRFXWB030003***
Site Id	**%**
Waste Stream	**%**
Data Status Code	**%**

201

Waste Container Data Report

Container Number : **IDRFXWB030003**
Site ID : **IN - IDAHO NATIONAL ENGINEERING LAB**
Data Status Code : **Pending Certification Data Approval by WIPP**
Waste Stream Profile : **INW216.001**
Container Type : **14 - SWB - USED TO OVERPACK 4 - 55 GAL. DRUMS IN GOOD CONDITION**

Waste Container Information

WAC Ex. # :
WAC Rev # : **0**
Cert Date : **01/16/2003**
Cert Site : **IN - IDAHO NATIONAL ENGINEERING**
Generator Site : **RF - ROCKY FLATS**
IDC Code : **001**
Matrix Code : **S3121**
TRUCON Code : **ID211A**
Shipping Category : **1001300250**
PCB Conc (ppm) : **0**
Decay Heat (watts) : **3.766E-01**
Decay Heat Uncert (watts) : **1.046E-01**
Closure Date : **02/08/1982**
Vent Date : **07/20/1989**
Aspiration Method ID : **3**
Gas Gen Rate : **.000E+00**
Gas Hyd Meth Gen Rate : **1.026E-08**
Gas Gen Comp Date : **02/20/2002**
Shipment Num :
Packaging Num :
Assembly ID :
Container Disposal Date :
Container Status Code : **PRE**

It can be established through process knowledge that the concentration of flammable VOCs present in the headspace of this container is <= 500ppm: **N**

Handling Code : **CH**
Waste Type: **MTRU**
Waste Stream BIR ID : **IN-W216**
Waste Stream MWIR ID : **IN-W216**
TRU Alpha Act (Ci) : **1.137E+01**
TRU Alpha Act Uncert (Ci) : **3.168E+00**
TRU Alpha Act Conc (Ci/g) : **1.450E-05**
TRU Alpha Act Conc Uncert (Ci/g) : **1.587E-05**
Pu239 Eq Act (PE Ci) : **1.137E+01**
Pu239 Fiss Gm Eq (FGE) : **3.864E+01**
Pu239 Fiss Gm Eq Uncert (FGE) : **9.682E+00**
Layers of Packaging : **2**
Fill Factor (%) : **37**
Liner Exists : **Y**
Liner Hole Size (mm) : **7.62**
Gross Weight (kg) : **1212.15**
Gross Weight Uncert (kg) : **2.08**
Alpha Surf Cont (dpm/100cm2) : **0**
BG Surf Cont (dpm/100cm2) : **0**
BG Dose Rate (mrem/hr) : **20**
Neut Dose Rate (mrem/hr) : **0**
Total Dose Rate (mrem/hr) : **20**
Overpack Cntr Num :
Overpack Cntr Type :

Inner Container Information

Container Number	Container Type
IDRF741202484	18 - 55 GAL DRUM TO BE OVERPACKED - SOLID/VITRIFIED - GOOD
IDRF741201615	18 - 55 GAL DRUM TO BE OVERPACKED - SOLID/VITRIFIED - GOOD
IDRF741202088	18 - 55 GAL DRUM TO BE OVERPACKED - SOLID/VITRIFIED - GOOD
IDRF741205405	18 - 55 GAL DRUM TO BE OVERPACKED - SOLID/VITRIFIED - GOOD

1-31-03

202

Waste Container Data Report

Container Number : **IDRFXWB030003**
Site ID : **IN - IDAHO NATIONAL ENGINEERING LAB**
Data Status Code : **Pending Certification Data Approval by WIPP**
Waste Stream Profile : **INW216.001**
Container Type : **14 - SWB - USED TO OVERPACK 4 - 55 GAL. DRUMS IN GOOD CONDITION**

Nuclide Information

Radionuclide	Description	Activity (Ci)	Activity Uncert (Ci)	Mass (g)	Mass Uncert (g)	List
AM-241	AMERICIUM 241	9.802E+00	2.623E+00	2.825E+00	7.560E-01	Y
CS-137	CESIUM 137	.000E+00	.000E+00	.000E+00	.000E+00	Y
PU-238	PLUTONIUM 238	3.840E-02	1.956E-02	2.219E-03	1.131E-03	Y
PU-239	PLUTONIUM 239	1.251E+00	4.619E-01	1.988E+01	7.343E+00	Y
PU-240	PLUTONIUM 240	2.781E-01	1.048E-01	1.209E+00	4.558E-01	Y
PU-241	PLUTONIUM 241	3.803E+00	1.540E+00	3.657E-02	1.481E-02	Y
PU-242	PLUTONIUM 242	3.608E-05	2.128E-05	9.089E-03	5.360E-03	Y
SR-90	STRONTIUM 90	.000E+00	.000E+00	.000E+00	.000E+00	Y
U-233	URANIUM 233	.000E+00	.000E+00	.000E+00	.000E+00	
U-234	URANIUM 234	2.678E-04	9.467E-05	4.237E-02	1.498E-02	Y
U-235	URANIUM 235	4.074E-05	9.952E-06	1.860E+01	4.544E+00	Y
U-238	URANIUM 238	2.291E-03	6.709E-04	6.737E+03	1.973E+03	Y

Material Parameters Information

Waste Matl Parm	Description	Weight (kg)
1	IRON BASE METAL ALLOYS	107.04
4	OTHER INORGANIC MATERIALS	84.37
8	PLASTICS	34.04
9	SOLIDIFIED INORGANIC MATERIAL	696.73
13	STEEL CONTAINER MATERIALS	290.00

Filter Model Information

Filter Model	Description	Quantity	Install Date
NF013	NUCFIL CARBON COMPOSIT	4	01/16/2003

Assay Methods Information

See Assay Methods Information for Inner containers.

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Appendix D

Examination Engineers' Daily Log

TRUPACT-157 Examination Engineer 'sLog

Date 1/27/03 Shift 7AM - 7PM (0700 - 1300 hrs) Engineer P.M. O'Brien, K.E. Archibald

Time	Initial	Comments/Notes/Observationsts
9:50 AM	KA	TRUPACT-157 ARRIVED AT HOT SHOP.
		TAPE #1 9:48. 10:00 AM. TRUPACT-157
		WAS REMOVED FROM TRUCK AND moved
		INTO THE HOT SHOP.
1021	PMO	One of the tamper resistant device on
		the OCV vent port plug was off.
		Doug Wales said that CBFO concurred
		that we should proceed with ops.
10:45	KA	TRUPACT ENTERED HOT SHOP AT
		9:45 AM
11:10	PMO	Finished installing shunt legs on ACGLF.
1307 PMO	~~1:07 PM~~	PMO Started Tape # 2. OCV lid is off
13:19 PMO 2/28/03	~~1:19 PM~~ PMO	PMO Lid off, and Tape # 2 time = 0hr 13min.
		Lid is on ring stand (OCV lid).
13:37	PMO	~~There was no vacuum on the ICV lid.~~ PMO
		When the EO ~~test~~ PMO leaned on the PMO 2/28/03
		ICV lid, it rotated, indicating a high
		vacuum inside the cask. It has completely
		rotated off the lock. This is visible in the video.
1352	PMO	Per Doug Wales & ops, they are proceeding
		with removal of the vent plug.

JMC 1-28-03 1329

PS 2

TRUPACT-157 Examination Engineer 'sLog

Date 1/27/2003 Shift 0700 – 1900hrs Engineer B.M. O'Brien

Time	Initial	Comments/Notes/Observations
~~BP~~ 1356	BMO	Retrieved vent plug. Cask has 4" Hg vacuum.
1400	BMO	Time on tape # 2 = 0:45:40"
1435	BMO	Vent port tool & plug smeared clean.
1442	BMO	ACGLF is locked onto the ICV lid over the sleeving. Stop tape for break. Tape #2 time = 1hr 29' 25"
1535	BMO	Tape #2 on
1545	BMO	Took camera shots of the playpen, scaffolding, inside and outside of the tents. Tape #2 off 1hr 39:54"
1605	BMO	Tape ~~out~~ BMO on 1:39:54.
1620 ~~1420~~ BMO	BMO	Took smears from inside of ICV Lid and top of payload.
1623 ~~1423~~ BMO BMO ~~1462~~	BMO	Took air sample from inside of ICV (>15 min spl) Stopped tape #2
1623	BMO	Started tape #3
~~1455~~ 1630	BMO	Vacuum pump blew circuit breaker. Air sample stopped.
1641	BMO	Payload top & ICV inside lid smears are <1000 βγ dpm/100cm², <20 dpm α/100 cm² – that is low levels / clean levels.

BMO 2/28/03

JMC 1.29.03 1830

Pg 3

TRUPACT-157 Examination Engineer 'sLog

Date 1/27/03 Shift 0700 - 1900 hrs Engineer B. H. O'Brien

Time	Initial	Comments/Notes/Observations
1654	BHO	Ops & Radcon determined not to add fixative due to Low ⓒ on smears. Pulling ICV lid to separate it. ~~BHO~~ BHO 2-28-03
1704	BHO	IDRF 004100~~2632~~2263 is next to the seal test ~~vent~~ port. Drum sample port on the cask is next drum clockwise from the seal test port drum. The drum next to the sample test port is in position #3, #IDRF004002801
1719	BHO	From a visual inspection, they can see the bottom of the ICV and see no free liquid or evidence of free liquid.
1722	BHO	Inserted puppet camera in ICV, payload. No evidence of shifting of drums, or loose lock chines from the puppet cam. No evidence of liquid or spills on the bottom plate near the seal test port. Time = 1:12:34
1739	BHO	Abv 2 oclock from ~~OCV~~ ICV-BHO vent port (or 12 oclock puppet cam video of black argonne repack drum.
1741	BHO	1:17:46 on tape 3. Center drum

JMC 1-28-03 1332

TRUPACT-157 Examination Engineer 'sLog

Date 1/27/03 Shift 0700 - 1900 hrs Engineer B. K. O'Brian

Time	Initial	Comments/Notes/Observations
1754	BKO	Finished with puppet camera inside payload. Maybe some evidence of white (paint chips?) on one of the slipsheets - otherwise looks good.
1756	BKO	Tape 3 off 1:32:28 - end of taping for 1/27/03.
1832	BKO	Kelly Vaynestin (fireman) says the guide tubes are still loose, as they should be indicating the top & bottom drums haven't rotated. - BKO

7:10 1/28/03 KupCheck[illegible]

13:33 1-29-03 Jmc

P3 5

TRUPACT-157 Examination Engineer 'sLog

Date 1/28/03 Shift 0700- 1900 Engineer K. Archibald

Time	Initial	Comments/Notes/Observations
7:09	KA	Reviewed Engr. Log From 1/27/03
7:49	KA	TAPE #4 WAS PUT INTO SYSTEM.
		IT WAS DETERMINED FROM THE
		POD TO TAKE AS MANY SURVEYS
		AS POSSIBLE BEFORE LIFTING THE
		PAYLOAD.
8:35	KA	SURVEYS WERE STARTED. A SURVEY MAP
		WAS USED TO CONDUCT THE WORK.
9:15	KA	PUPPET CAMERA WAS INSERTED INTO
		PAYLOAD. ALL FOUR, TOP DRUMS HAD
		FILTERS. THE CAMERA WAS moved to
		THE NEXT LEVEL IN THE PAYLOAD. ~~[illegible]~~ KA 1/31/03 9:15 ALL FILTERS
		WERE IN PLACE. FIVE BURIED FILTERS
		WERE LOCATED INSIDE THE PAYLOAD
9:38	KA	Smear surveys were completed.
10:00	KA	STARTED 4-SCREEN VIDEO IN CONF.
		Room # 135 B. (TANO)
12:25	BRD	Fixed connections on 4 screen video feed in
		Room 135B. Also reviewed prior log entries.

entry out of sequence by BRD 1/28/03 - BRD

JML 1.29.03 1335

TRUPACT-157 Examination Engineer 'sLog

Date 1/28/03 Shift 0700 – 1900 Engineer KIP Archibald
1000 – 1900 B. M. O'Brien

Time	Initial	Comments/Notes/Observations
12:10	KA	RAD support entered the Hot SHOP. IT WAS Determined TO CONTINUE AS PLANNED. USING THE EXAMINATION PLAN.
12:22	KA	PAYLOAD IS BEING REMOVED FROM ICV.
1250	BMO	Payload Bottom umbilical was cut and the payload rotated to view through all 4 windows on payload sleeve side. RCT's did rad surveys of payload as it was removed from ICV. Operators say the inside of the ICV looks visually ok. No abnormalities.
1257	BMO	Video power tripped out Tape = 2:01:02.
1259	BMO	Tape #5 started. Power to Video back on
1304	BMO	Payload dropped into tent.
1308	BMO	Bottom of drum .. 1338 ring looks quite rusty. Lost power again.
1330	BMO	Tape #5 paused. during power off. New backup time = 01:00:00.

JMC 1.29.03 1335

TRUPACT-157 Examination Engineer 'sLog

Date 1/28/03 Shift 0700-1900 Engineer K. K. Archibald
B. M. O'Brien

Time	Initial	Comments/Notes/Observations
13:20	KA	PAYLOAD WAS Disconnected FROM Crane. THERE WERE NO Difficulties with PAYLOAD.
1324	PNO	Sleeve removed from top of payload.
1337	PNO	Can see evidence of white spots from liquid in the slipsheet below drum 1DRF004002790, ~~SWRPF operator~~ mechanic (JAN) Ken 1/29/03 8:37 AM (Jim Fernandez) says some of the slipsheets had bird droppings on them. The spots look like something has been wiped off them, such as would have been for bird droppings.
~~1337~~	~~PNO~~ PNO 2-28-03	
1341	PNO	There are also drip marks near 00394 tape #5 00:39:06. They appear to be in line with the plastic wrap above them. The SWRPF operators say some of the payloads were built, then sent back (transferred in the rain), ~~WHO~~ PNO We will have the RCT's swipe these spots.

Part 8

TRUPACT-157 Examination Engineer 'sLog

Date 1/28/03 Shift 0700 -1900 Engineer K. E. Archibald
B. M. O'Brien

Time	Initial	Comments/Notes/Observations
1403	BMO	Casey Gadbury (CBFO) says we need to look for rubbing between the top rolling hoops of the top drums and the rivets on the inside sides of the ICV lid. Will need to position the lid over a camera to look at these before replacing the ICV Lid.
1410	BMO	Tape 5 01:07'. Looked at an item on the side of the payload. After inspection, it appears to be part of the slip sheet.
1417	BMO	Waiting for results of inside of ICV smears. Tape 5 off, 01:14 hrs run time.
1618	BMO	Restarted single monitor & 4 screen monitor VHS recorders. Rewound and wrote over tape #2 as nothing was happening while we waited for smear results except trash bag out. The area was reclevred for no anti-c's required for ICV processing.

TRUPACT-157 Examination Engineer 'sLog

Date 1/28/03 Shift 0700-1900 Engineer B. K. O'Brien
K. E. Archibald.

Time	Initial	Comments/Notes/Observations
1630	BKO	Step 4.5.32 "inspect ICV interior" will be worked out-of-sequence after the sleeving is removed from the ICV cavity so that we can take pictures of the ICV cavity from the D-man (Overhead manipulator) camera.
1635	BKO	Sleeving removed from ICV cavity.
1638	BKO	Looked into ~~top~~ BKO NE angled side and bottom. Bottom brackets look good. There are a few squiggly scratches on the sides and radial black marks on the bottom. The RCT's took more smears of the ICV cavity. The QI (CJ.) says the scrapes look like normal wear. Casey Cadbury (CBFO) concurred. There was one small ~~dent~~ BKO 1/28/03 dent in the bottom oriented close to the vent port.
1657	BKO	Operator took digital stills of the inside of the ICV cavity and the ICV lid.

TRUPACT-157 Examination Engineer 'sLog

Date 1/28/03 Shift D 700 - 1100 Engineer BHO Brian
K. K. Archibald.

Time	Initial	Comments/Notes/Observations
1702	BHO	Stopped tape #5, started tape #6
1705	BHO	There are a few dark spots a little bit above the weld line. There are also a few grinder marks on the welds.
1707	BHO	Verified w/ SS that RCT's removed ICV lid as it was lifted from the ring stand.
1730	BHO	00:27:10 on Tape #6. Videoed outside of ICV, prior to dropping it in the disposal box. Nothing special noted.
1757	BHO	The OCV lid was replaced on the OCV. The inside of the lid was not resurveyed as it previously surveyed clean upon removal.
1810	BHO	Plastic sheeting was placed on the OCV Lid in preparation for removal from the hot shop. tape time 01:07:- hrs
1813	BHO	Tape stopped (#6). 4-screen / split screen tape # 2ss stopped @ 01:58 hrs run time.

TRUPACT-157 Examination Engineer 'sLog #11 pno

Date 1/29/03 Shift 0700 - 1900 Engineer ~~KE~~ Archuleta/ B H O'Brien

Time	Initial	Comments/Notes/Observations
9:26	Ka	THE REMOVAL OF THE OCV. SMEARS ARE BEING TAKEN ON THE TOP OF THE OCV CID.
10:04	Ka	THE OCV WAS MOVED TO THE ~~OUT~~ BAY OUTSIDE THE HOT SHOP AREA. THERE WERE several SMEARS TAKEN WHEN THE OCV WAS MOVED.
1026	pno	stopped tape #7 tape = 1:12 hrs
11:10	pno	Casey Cadbury asked for still photos of the payload e-mailed to Kerry Watson at CBFO prior to payload ~~disassembly~~ pno disassembly. Pictures were taken of the video image of the tent video camera inside the tent with the still camera and sent to him.
11:27	pno	01:25 hrs tape time. Stopped SWDs in Hot shop. Stopped tape for lunch.
12:23	Ka	TAPE IN CONFERENCE ROOM WAS STARTED.
1234	pno	Tape #3 split screen started later than previous note. @ 12:34. pno

pno 2/28/03

TRUPACT-157 Examination Engineer 'sLog

Date 1/29/03 Shift 0700-1900 Engineer K.G. Archibald
BFO'BRIEN
J.M. LACY

Time	Initial	Comments/Notes/Observations
		pmo 2-28-03
1252	pmo	SWB #s starting from east are 1) ~~IDRF~~ IDRFXWB030001, 2) ...30002, 3)...30003, as viewable from the video cameras. Cannot see the westernmost 3 yet.
1301	pmo	Stopped tape #7, 1:55:45 hrs. Started tape #8,
~~1341~~	JML	READ LOG SHEETS 1-27-03 700AM THRU CURRENT
1408	pmo	Clarification for previous notes on loss of video. This was due to the breakers in the Hot Shop tripping. This was resolved by swapping some equipment to different circuits.
1418	pmo	SWB's are staged ready for accepting drums. Shut off video tape while crane is on break. Run time 1:15 hrs
1428	pmo	IN regards to note at 1252, the operators moved the tape & plastic on the westernmost 3 drums so we can see the SWB #s from the cameras. These are 4) IDRFXWB030004, 5) IDRFXWB030005, and 6) IDRFXWB030006.

TRUPACT-157 Examination Engineer's Daily Log

Date 1/29/03 Shift 0700 - 1900 Engineer B.W.O' Brien, K.E Archibald, J. M. Lacy

Time	Initial	Comments/Notes/Observations
1444	BWO	Tape #4 split screen was started.
1501	BWO	Restarted tape #8.
1520	BWO	Regarding entry on 1/28/03 17:57 pg 10.- the RCT's say the did survey the underside of the OCA lid, when I asked late last night (1/28/03).
1528	JML	PACK ROTATED, VIDEO AND STILL PHOTOS TAKEN
1532	JML	PAYLOAD ROTATED FURTHER 120° - VIDEO & STILL PHOTOS TAKEN
1545	JML	BEGIN REMOVING SHRINK WRAP FROM PAYLOAD AND REMOVE TOP SLIP SHEET.
1546	JML	REMOVE TAPE 8 AT 15:46 - REPLACE WITH TAPE 9 BEGIN TIME 1546.
1550	JML	NO OBVIOUS DAMAGE TO DRUM TOPS OR FILTERS WE NOTE SOME LIDS ARE CONCAVE.
15.56	JML	SMEAR SAMPLES OF DRUM 1 (IDRF004102263) DRUM LID APPEARS CONCAVE - NO ISSUES OR CONCERNS NOTED
1621	JML	DRUM IS CLEAN - MOVING OUT OF TENT
1630	JML	DRUM SURVEY PRIOR TO PLACEMENT IN SUB Ocount ON MASLIN
1639	JML	LIFT DRUM IDFR004002801 (Pos 3) for exam

TRUPACT-157 Examination Engineer's Daily Log

Date 1.29.03 Shift 0700-1900 Engineer JM LACY
BH O'BRIEN
KE ARCHIBALD

Time	Initial	Comments/Notes/Observations
1647	JML	SURVEYS COMPLETE, BEGIN INSPECTION (2801)
		NO RUST OR DAMAGE EXCEPT SOME WEAR LOWER RoCC
		HOOP. LOCK RING & FILTER RESULTS BACK CLEAN, LID IS
		DOWN. LOCK RING BOLT & FILTER ARE SECURE.
		SWIPP OPP. ASSESSMENT GOOD.
1658	JML	SMEARS CLEAN - DRUM MOVING OUT OF TENT.
1643	JML	TAPE 4 (SS) OUT, TAPE 5 (SS) IN (SPLIT SCREEN - JML) JML 3.3.03
1714	JML	2801 INTO SWB 30001
1717	JML	DRUM IDRF0041018Q0 BEGIN SMEARS
1728	JML	1890 · Smears Ok, FILTER, LOCKRING SECURE.
~~1737~~	JML	LID IS UP. DRUM IN GOOD CONDITION
1737	JML	Count 1 dpm α - DRUM LEAVING TENT
1745	JML	Maselin swipes complete - DRUM INTO SWB 30001
1747	JML	DRUM IDFR0041022S4 PULLED FROM PACK
1800	JML	FILTER & LOCK RING CLEAN & SECURE, SWIPP
		OP EVAL GOOD. DRUM LID UP
1808	JML	SURVEY COMPLETE - NO CONTAMINATION - MOVING OUT
		OF TENT.
1815	JML	Maselin SURVEY COMPLETE - DRUM INTO BOX 30001
		STOP FOR THE DAY

TRUPACT-157 Examination Engineer's Daily Log

Date 1/30/03 Shift 0700-1900 Engineer B. M. O'Brien
J. M. Lacy

Time	Initial	Comments/Notes/Observations
8:00	JML	BHO: JML ATTENDED DAILY BRIEF AND PRE-JOB MTGS. WORK WENT WELL 1.29, WITH COMPLEMENTS ALL AROUND, SO WORK WILL CONTINUE TODAY WITHOUT SIGNIFICANT MODIFICATION.
8:23	JML	TAPES ~~FOR~~ OF JML 1-3-3 SPLIT SCREEN ~~RETOAT~~ JML 1-3-03 NUMBERS MODIFIED WITH ADDITION OF "SS" TO NUMBERS
8:35	JML	TAPE 11 STARTED
8:36	JML	TAPE 6 SS STARTED
8:50	JML	DRUM RF JML 1-3-03 IDFR004002790 LIFTED FROM PAYLOAD
8:58	JML	FILTER, LOCK RING SMEARS CLEAN, SECURE, SWEPP OP ASSESSMENT SATISFACTORY
9:08	JML	NOTE SOME PAINT CHIPS LEFT ON SLIP SHEET ALSO EVIDENCE OF MOISTURE - CURRENTLY DRY ON SURFACE - THIS IS MIDDLE SLIP SHEET
9:10	JML	SWIPE ASSESSMENT - DRUM IS CLEAN - MOVING OUT OF TENT
9:20	JML	DRUM INTO SWB IDRFXXWB030002
9:22	JML	LIFT DRUM JML 1-3-03 4120TO IDRF741202088 FROM PAYLOAD. TOP NOTED CONCAVE, RUST ON SIDE NEAR BOTTOM HEAD - MINOR. BOTTOM CLEAN.
9:33	JML	FILTER, LOCKRING, CLEAN, SECURE, SWEPP OP ASSESS ACCEPTABLE

TRUPACT-157 Examination Engineer's Daily Log

Date 1·30·03 Shift 0700 → 1900 Engineer JM LACY
BM O'BRIEN

Time	Initial	Comments/Notes/Observations
9:33 cont'd	JML	MISSED VIDEO RECORD OF FILTER, LOCKRING CHECK
		REPORTED SECURE BY FOREMAN
9:42	JML	SURVEYS ALL BELOW LIMITS - DRUM MOVING FROM
		TENT.
9:50	JML	DRUM INTO SWB 30003
9:52	JML	DRUM IDRF741202484 LIFTED FROM PAYLOAD
		DRUM APPEARS IN BRAND NEW CONDITION
		BOTTOM SHOW PAINT RUNS - NOT MOISTURE OR
		DAMAGE.
10:02	JML	DRUM LID SURVEY 27.7 DPM α ADDITIONAL
		SMEARS OF LID AND FILTER TAKEN
10:20	JML	2nd Smears Filter 55, LID ~~120~~ 123 and 39 dpm 123 ← JML 3-3-03
		these are in-shop prelim. LID WILL BE SPRAYED
		WITH FIXATIVE AND BAGGED
1033	BMO	Fixatin sprayed on top, Filter was
		re checked and is tight,
1035	BMO	The dock ring bolt is slightly loose
		and the lock nut ~~JML~~ BMO, BMO 3/3/03 JML nut
		was loose.
10:35	JML	SPLIT SCREEN TAPE 6 STOPPED, TAPE 7 STARTED
10:38	JML	TAPE 11 STOPPED, TAPE 12 ~~STARTED~~ JML-3-303 JML PLACED AND PAUSED

TRUPACT-157 Examination Engineer's Daily Log

Date 1·30·03 Shift 0700 - 1900 Engineer J. MACKEY
DM O'BRIEN

Time	Initial	Comments/Notes/Observations
10:40	JML	INSPECTION COMPLETE, CONTINUE DRUM BAGOUT
10:45	JML	TAPE 12 STARTED
10:54	JML	DRUM BAGGED AND TAPED
10:57	JML	OBTAINED RADIO TO MONTOR COMMS - PREVIOUS TO THIS HAVEN'T HAD DIRECT ACCESS TO RADIO TRAFFIC
11:01	JML	FOREMAN SHOWED THAT LOCKRING CAN BE ROTATED BY HAND. ~~STOD~~ JML-30-03 SEE TAPE 12. DRUM IN SWB 30003. CREW WILL BREAK.
11:04	JML	TAPE 12 STOPPED @ 17min 48sec
11:05	JML	STICKY ROLLER WITH DEBRIS FROM SLIPSHEET MOVED FROM PAYLOAD AREA
11:06	pkw	Tape 12 was restarted as the roller was passed out of the drum inspection room smear port.
11:10	pkw	Tape 12 stopped again. 00:23 hrs run time
12:50	JML	TAPE 755 PAUSE 1147 - RESTART 1250 (SHOULD BE CHANGED in 50min 1340)
12:54	JK	TAPE 12 RESTARTED
12:56	JML	OPERATIONS RESTARTED
1300	JML	SLIPSHEETS, SHRINKWRAP REMOVED FROM LOWER PAYLOAD

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TRUPACT-157 Examination Engineer's Daily Log

Date 1·30·03 Shift 0700 -1900 Engineer JM LACY
BH O'BRIEN

Time	Initial	Comments/Notes/Observations
1:00 continued	JML	ALL ARGONNE-STYLE FILTER GASKETS HAVE SIMILAR LOOK TO 1ST.
1:05	JML	LIFTED DRUM IDRF 741205405
1:08	JML	OBSERVE ~~IDRF0747007411~~ IDRF 074700411 JML 3.3.03 JAMB NUT NOT TIGHT LOCK RING SPACING APPEARS SIMILAR TO PREVIOUS
1:16	JML	DRUM TOP SURVEYS BELOW LIMITS, FILTER AND LOCKRING ~~SEAR~~ SECURE JML 3.3.03, CONTAINER INTGRITY ACCEPTABLE. LARGE DENT PREVIOUSLY WIPP-APPROVED
1324	JML	DRUM SURVEY ACCEPTABLE -MOVING DRUM OUT OF TENT
1332	JML	MASECIN SURVEY COMPLETE - DRUM MOVED INTO SWB 30003
1335	JML	DRUM IDRF 741201615 LIFTED FROM PAYLOAD
1337	JML	STICKY ROLLER SURVEY OF BOTTOM SLIPSHEET FROM TOP PAYLOAD WITHIN LIMITS
1348	JML	SURVEYS OF FILTER, LOCKRING CLEAN, BOTH ARE SECURE.
~~1355~~ 1358	BHO	Surveys are complete of drum. Levels are within limits. BHO 2/28/03
1353	JML	TAPE 7SS REMOVED TAPE 8SS STARTED

TRUPACT-157 Examination Engineer's Daily Log

JM LACY

Date 1.30.03 Shift 0700-1900 Engineer BH O'BRIEN

Time	Initial	Comments/Notes/Observations
1405	JML	MASELIN SURVEY ACCEPTABLE, DRUM INTO BOX 30003
1408	JML	LIFT IDRF074700411 FROM PAYLOAD
		LID IS DOMED UP (NORMAL) EVIDENCE OF RAIN
		OR MOISTURE ON ~~TOP~~ JML 3.3.03 LID SURFACE, JAMB NUT
		VISIBLY LOOSE. FILTER APPEARS OK, DRUM AS NEW.
1420	JML	SURVEYS ON TOP ARE COMPLETE, ACCEPTABLE
1425	JML	FILTER SECURE, 2 ROTATIONS OF BOLT, BRINGING
		JAMB NUT TO SEAT. SWEPP OP ASSESSMENT
		OK.
1428	JML	DRUM SURVEY OK - DISCUSSION CAN DRUM BE
		MOVED WITH LOOSE BOLT? ⇒ DRUM WILL BE BAGGED
1430	JML	TAPE 12 REMOVED, TAPE 13 STARTED
1435	JML	CORRECTION BOLT TIGHT - MOTION WAS ON THE
		JAMB NUT. BOX WILL BE MOVED TO SWB0006
		SW CORNER
1447	JML	MASELIN COMPLETE - DRUM INTO SWB
1448	JM	DRUM IDRF741201718 LIFTED FROM PAYLOAD
		LID IS OP, LIKE NEW CONDITION, FILTER APPEARS
		SECURE, SOME VERY SMALL DENTS OBSERVED.
1458	JML	TOP SMEARS BELOW LIMITS - LOCK RING
		CLEAN & SECURE

TRUPACT-157 Examination Engineer's Daily Log

Date 1.30.03 Shift 0700 - 1900 Engineer JM LACY / BH O'BRIEN

Time	Initial	Comments/Notes/Observations
1508	JML	DRUM SURVEYS ACCEPTABLE - MOVING OUT OF TENT
		DRUM INTO BOX 0004, SW CORNER
1515	JML	OP BREAK FOR LUNCH
1518	JML	TAPE 13 PAUSED 46 min on tape
1518	JML	TAPE 8SS PAUSED WITH 1 HR 25 min on tape
1632	JML	TAPE 8SS RE-STARTED @ 1630 - NEED TO
		CHANGE TAPE AT 1705
1633	JML	OPERATIONS RE-STARTED
1635	JML	DRUM IDRF741204650 LIFTED FROM PAYLOAD
		LARGE-ISH DENT ON UPPER ROLL RING - NOT
		SERIOUS, ONLY VISIBLE DENT. BOTTOM IS GOOD
1642	JML	TOP SMEARS OK, FILTER, LOCKRING ARE SECURE
		SWEPP OP ASSESSMENT OK
1645	JML	TAPE ~~12~~ JM 3.3.03 13 RE STARTED - RE PERFORM
		VIDEO AND FILTER CHECK
1652	JML	VIDEO EXAM COMPLETE
1653	JML	DRUM SMEARS BELOW LIMITS, DRUM MOVING
		OUT OF TENT
1704		DRUM IN SWB 0004, MASELIN COMPLETE

TRUPACT-157 Examination Engineer's Daily Log

Date 1/30/03 Shift 0700-1900 Engineer B.M. O'Brien
J. M. Lacy.

Time	Initial	Comments/Notes/Observations
1709	JML	DRUM IDRF ~~074~~ 074 JML 3.3.03 700394 LIFTED OFF PAYLOAD
		DRUM IN GOOD CONDITION
1716	JML	SMEAR RESULTS FROM TOP OK, FILTER, LOCK RING
		SECURE, DRUM INTEGRETY OK, &
1719	JML	ONE SMALL DENT ON SIDE NOTED. NO OTHER
		DAMAGE
1723	JML	DRUM SURVEYS BELOW LIMITS - MOVING OUT
		OF TENT AFTER CAM AIR FILTER CHANGED
1738	JML	MASELIN SURVEY COMPLETE, DRUM INTO SUB0006
1740	JML	DRUM IDRF 074 22/338 (FINAL DRUM) LIFTED
		INTO INSPECTION AREA
1750	JML	TOP SMEARS BELOW LIMITS, FILTER, LOCKRING
		SECURE, SWEPP OP ACCEPTABLE (THO RUSTY)
		QUITE A BIT OF RUST OVER SIDES AND NEAR
		BOTTOM RIM, NO SIGNIFICANT DENTS, THO
		SEVERAL SMALL ONES
1759	JML	DRUM SURVEYS BELOW LIMIT, MOVING OUT OF
		TENT
1804	JML	TAPE 13 STOPPED TAPE 14 STARTED
1807	JML	Last Drum put in SWB IDRF XWB130003
1810	JML	Tape 14 stopped. Run time = 00:07 hrs:min
1816	JML	LATE ENTRY TAPE 8SS STOPPED / TAPE 9SS
		STARTED AT 1705

TRUPACT-157 Examination Engineer's Daily Log

Date 1.31.03 Shift 0700-1900 Engineer JM LACY / BH O'BRIEN

Time	Initial (JML 3.3.03)	Comments/Notes/Observations
~~1815~~ 0815	pmo	Restarted tape #14. Tape time = 00:06:40
0817	JML	Tape LOSS SPLIT SCREEN STARTED
0818	JML	TID ~~#965~~ 3963. TID ON BAGGED DRUM IDRF741202484
0847	JML	CONDUCTED VISUAL EXAM OF BOTTOM SLIP PLATE OF LOWER 7-PACK. EVIDENCE OF MOISTURE, SOME DEBRIS.
0901	JML	DUNNAGE DRUMS ! NUMBER VISUALLY INSPECTED ON VIDEO
0905	JML	SOME WATER IN DUNNAGE DRUMS - REMOVING LIDS - DUN. DRUMS WERE STORED OUTDOORS
0909	pmo	pmo Dunnage drums were stored w/o the bungs in. pmo 2/28/03
0915	pmo	The water was poured out of ~~the~~ drums #5 & 6 (IN DUN N800008, IN DUN N800006).
0919	pmo	Workers out of the shop. Tape #14 stopped. Run time = 01:10:31.
0920	pmo	Turned off tape LOSS off. Run time = 01:03:=,
0958	JML	TAPE 14 ON

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TRUPACT-157 Examination Engineer's Daily Log

Date 1·31·03 Shift 0700 - 1500 Engineer JM LACY / PM O'BRIEN

Time	Initial	Comments/Notes/Observations
1005	JML	TAPE 10SS ON
1051	JML	TAPE 14 STOP
1053	JML	TAPE 15 START
1113	JML	TAPE 11 SS STARTED (TAPE 10SS OUT)
1121	JML	TAPE 15 STOP 00:28 ON TAPE
1123	JML	TAPE 11SS STOP 00:10 ON TAPE
1243	JML	LATE ENTRY - PRIOR TO LUNCH (11:30) DAMAGED SECTIONS OF GASKET ON SWBS 2 & 4, BOTH ON THE WEST SEMICIRCULAR SIDE, WERE REPLACED WITH NEW GASKET MATERIAL
1252	pho	Tape 15 restarted. run time = 00:28
1254	JML	TAPE 11SS RESTART
1304	JML	2 DUNNAGE DRUMS REMOVED FROM SWB 2 FOR WATER INSPECTION - UNCLEAR FROM VIDEO WHETHER ANY WATER PRESENT
1307	JML	DRUMS RETURNED TO SWB 2 (Dunnage - pho) pho 2/28/03
1315	pho	All dunnage drums in SWB 2, 2, 4, 5, 6.
1331	pho	Tape 15 stopped. run time 01:08. Tape 11SS stopped at 13:27.
1343	pho	Tape 15 restarted.
1344	pho	Tape 11SS ~~Stopped pho~~ restarted. pho 3/3/03

TRUPACT-157 Examination Engineer's Daily Log

Date 1/31/03 Shift 0700-1900 Engineer B. H. O'Brien
J. M. Lacy

Time	Initial	Comments/Notes/Observations
1422	pmo	SWB #1, 2, 4, 5 & 6 drum lids are on. Mechanics are installing the bolts on them now.
1436	pmo	Tape #15 stopped run=02:00. Tape #16 Started.
1449	pmo	Torque wrench broke. Tape off at run time 00:12 on tape.
1451	pmo	Tape #1155 stopped run time = 01:47.
1455	pmo	Reviewed digital stills of TID on drum 10RF74120284, photo MVC-861X.JPG. It is stamped ANL-W 3963.
1552	pmo	Restarted tape #16
1706	pmo	Operations found another torque wrench, finished bolting the SWB Lids (except no lid on #3) and moved them to the warm shop next door. The SWB's were smeared before they were moved out. SWB #3 remains in the TAN Hot shop w/o a lid.
1713	JML	JML 3-3-03 ~~FIRST 5~~ ALL BUT BWD3 ARE MOVED OUT OF HOT SHOP AND INTO WARM SHOP, WHERE THEY WILL STAY FOR THE WEEKEND.
1715	pmo	Tape #16 stopped.

TRUPACT-157 Examination Engineer's Daily Log

Date 2/3/03 Shift 1200 - 1900 Engineer B. K. O'Brien

Time	Initial	Comments/Notes/Observations
1257	pno	Read DAR to TPR-6233 (DAR 9855Z)
1257	pno	Re-read previous log entries
1257	pno	OCV on trailer is hooked up and will be transported to RWMC today.
1310	pno	SWB #7 was moved into the hot shop and Labeled.
1314	pno	Operators put shrink wrap fpno on the hot ship crane hook to keep it from contaminating the rigging.
1339	pno	Gasket put on SWB # 7 (IDRFXWB030007)
1346	pno	Drum IDRF74120248Y removed from box SWB #6 (IDRFXWB030006) and put it in the NE corner of SWB #7. ~~pno~~ fpno RCT's measured rad levels of the drum as it was pulled out, and rescanned the bottom of the bagged drum. pno 2/28/03
1400	pno	3 dunnage drums are now in SWB #7.
1423	pno	The Lid is on and bolts torqued on SWB #7.
1424	pno	Bob Miklos says the bag around drum ~~IDFRX~~ pno ~~IDFR~~ pno IDRF74120248Y was not slit for shipment since it will not be going to WIPP once is.

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TRUPACT-157 Examination Engineer's Daily Log

Date 2/3/03 Shift 1200-1900 Engineer B. H. O'Brian

Time	Initial	Comments/Notes/Observations
1429	bno	Lid was set on IDRFXWB030003 ~~3003~~ ~~bno~~ bno 3/3/03 after
		a dunnage drum was added to the SWB.
1449	bno	the lid has been torqued on SWB
		IDRFXWB030003. ~~Tape ran~~ bno bno 3/3/03
1450	bno	Tape #17 run time = 01:46
1500	bno	Both SWB's were smeared by RCT's
		in preparation for removal from the Hot
		Shop.
1504	bno	Tape #17 run time = 02:00 hrs.
1507	bno	Late entry, Tape #17 started at 1304 hrs
~~1507~~	~~bno~~	~~Tape #18 started. bno~~ ← → bno 2/28/03
1509	bno	Tape #18 started.
~~150~~		~~bno~~ bno 2/28/03
1510	bno	Both SWB's were moved out of the hot
		Shop into the extension.
1511	bno	Late entry, Tape #17 was stopped at 1507 hrs
1513	bno	RCT's took rad readings on
		SWB IDRFXWB030003.
~~1~~		~~bno~~
1518	bno	Tape #18 stopped, Run time = 00:09:49.
1524	bno	The wooden box with the ICU, box #522163,
		was loaded on the trailer this morning.

TRUPACT-157 Examination Engineer's Daily Log

Date 2/5/03 Shift 1200-1900 Engineer B. M. O'Brien

Time	Initial	Comments/Notes/Observations
1545	BMO	Took still digital pictures of the ICV box on the trailer.
1551	BMO	SWB IDRFXWB030007 was placed on the trailer with the ICV box.
1628	BMO	S.S. had a carpenter check the ~~height~~ BMO height of the ICV box on the trailer to make sure it would fit under the pipe rack at (TAN?). * BMO 2/28/03
1654	BMO	The other six SWB's are loaded on the trailer. Order (front to back) is SWB IDRFXWB 030003, 030006, 030004, 030002, 030001, 030005.

Last pg BMO 2/14/03

1. TRUPACT 157 EXAMINATION CHECKLIST FOR ENGINEER'S LOG

This checklist is per the information to record as specified in PLN-1169. The purpose of the checklist is to ensure that all items specified in the plan are implemented.

The examining engineer is to initial each item completed or N/A if applicable. Any additional notes and comments shall be placed in the Engineer's log sheets. Any N/A'd items shall have an accompanying note placed on the daily comment sheet.

1.1 General Information on Video Recordings

Video recordings are not required to be operating 100% of the time, but will be taken during major operation sequences where feasible as indicated in this plan. The video recording will include date and time if practicable. Video recording may be taken during other activities as directed by project supervision. Audio recordings may be made during the evolutions if practicable .

1.2 General Information to Record

The purpose of the examination plan is to provide the basis for the disassembly of the contaminated payload in TRUPACT-157 and collect information for preparation of a final report on the as-found conditions during the disassembly operation. The operations will be directed by TAN operating procedures.

The examination data will include:

- Data recorded as part of operations procedures
- Radiological surveys to support determination of contamination release and the extent of contamination spread and type of contamination found.
- An engineer's log of physical observations supporting determination of position and as-found conditions of drums, lids, filters, etc.
- Videotape recording during major operation sequences. At other times, such as when conditions of interest are found, recording will be as directed by the Job Supervisor. Audio recordings may be made during the evolutions if practicable.
- Photographic documentation of key findings/observations will be indexed to a specific drum number.
- Documentation of as-found conditions of interest that might indicate the failure mechanism, such as:
    - Filter or Lid Loosening:
        - Filters all in place
        - Hand-tightness of filters and lock-chines
    - Drum lid popping during pressure cycles:

- Drum lid shape – domed up or down
- Evidence of drum lid paint cracking or flaking

o Crash Impact or Rumble Strip Effects:

- Evidence of motion between the ICV and OCV such as crushed foam spacer, gaps, or ICV off-center in the OCV
- Evidence of motion between the package and ICV such as scuffs or marks on the ICV at drum height, package off-center, or torn or worn plastic wrap
- Wear pattern on the ICV floor
- Dents or flat spots around the drum heads
- Any indentation, or buckling and depth measurements of any dents found

o Rust-Through or Leak:

- Moisture or condensate on the outside of the drums or inside of the ICV
- Spots left by dried liquid on the drums, ICV walls or ICV bottom
- Rust on drums

paper Copies/Video Obtained

2. EXAMINATION CHECKLIST

2.1 Information to Record for the OCA

- Date 1/27/03 Init BMD Video documentation of OCA processing
- Date 1/27/03 Init BMD Pre-operational external surveys of the Hot Shop — Nothing above
- Date 1/27/03 Init BMD Installation of OCA protective sheeting for protection from contamination
- Date 1/27/03 Init BMD Removal of the OCA lid

2.2 Information to Record before Payload Removal

- Date 1/28/03 Init BMD Video of containment systems used to contain contamination prior to and during ICV lid removal and payload removal
- Date 1/28/03 Init BMD Airborne contamination surveys of the inside of the ICV
- Date 1/27/03 Init BMD Video documentation of ICV lid removal process. The ICV should be opened using extended lock ring handles if possible. If vacuum on the ICV is required to remove the lid, the vacuum should be relieved slowly to minimize disturbance inside.

- Date 1/27/03 Init BNO Radiological surveys under ICV lid.
-
- Date 1/28/03 Init BNO Decision was made not to add fixative due to low/no ⓒ on smears and airborne samples. Fixatives should used only if absolutely necessary to protect the health and safety of the workers since they will affect the results of the examination. If fixation materials are required by Radiological Engineering to control airborne contamination, an attempt should be made to survey the inside of the ICV prior to application of the fixative since the fixative will attenuate alpha contamination. This survey is desirable for determination of TRU content on the ICV for disposition.
- NA Date 1/28/03 Init BNO If fixatives are used, documentation, written and video, of application of any contamination fixation materials applied to control contamination spread or release.
- Date 1/28/03 Init BNO Video documentation and radiation surveys and smears following lid removal
- Date 1/28/03 Init BNO Radiological surveys of accessible surfaces of payload

2.3 Information to be Recorded During Payload Disassembly

- Date 1-29-03 Init JM Photos of payload before any disassembly from top, and at each 120 degrees of rotation so that all drum exteriors on the assembled payload are documented
- Date 1-29-03 Init JM Video of opening of payload shrink wrap and removal of each 7-pack slip-sheet
- Date _____ Init _____ Video and photographs of the top of the 7-pack prior to removal of any individual drums.
- Date _____ Init _____ Video of removal of the guide tubes from the payload assembly
- Date _____ Init _____ Video of the removal of each individual drum from the 7-pack
- Date _____ Init _____ Video of 360-degree rotation of individual drum to examine sides and bottom
- Date _____ Init _____ Video and photographs of the as-found condition of the top of each drum, including the vent filter and lid locking ring, paint on drum with close up pictures and video as necessary to identify conditions of special interest such as indentation , rust or buckling.
- Date _____ Init _____ Radiological surveys of individual drums to determine contamination levels
- Date _____ Init _____ Video of hand checking of filter tightness

See page for individual drum BNO 1/29/03

TRUPACT-157 Examination Engineer's Log

Drum # ~~IDRF00410Z263~~ JMC 3.3.03 IDRF00410Z263 Position # 2

- Date 1.29.03 Init JMC Video of the removal of each individual drum from the 7-pack
- Date 1.29.03 Init JMC Video of 360-degree rotation of individual drum to examine sides and bottom
- Date 1.29.03 Init JMC Video and photographs of the as-found condition of the top of each drum, including the vent filter and lid locking ring, paint on drum with close up pictures and video as necessary to identify conditions of special interest such as indentation , rust or buckling.
- Date 1.29.03 Init JMC Radiological surveys of individual drums to determine contamination levels
- Date 1.29.03 Init JMC Video of hand checking of filter tightness
- Date 1-29-03 Init JMC Video of hand checking of lock-chine tightness
- Video of As-Found conditions (Yes/No):
  - Y Filters all in place
  - DN Drum lid shape – domed up or down
  - N Evidence of drum lid paint cracking or flaking
  - Yes - Noted by obs team - minor Dents or flat spots around the drum heads
  - N Any indentation, or buckling and depth measurements of any dents found
  - N Moisture or condensate on the outside of the drums or inside of the ICV
  - N Spots left by dried liquid on the drums, ICV walls or ICV bottom
  - Minor Rust on drums
- Information to Record During Drum Repackaging
- Date 1.29.03 Init JMC Video of drums placement into a suitable overpack for return to storage at RWMC.

SWB: IDRFXLWB030001

- Date 1-29-03 Init JMC Documentation of drum numbers and associated overpack number.
- Date 1/31/03 Init BLW ~~Video slitting of bags around drums in the overpacks.~~ NO Bag - BLW pno 2/28/03 Since NO contamination on drum.

TRUPACT-157 Examination Engineer's Log

Drum # IDRF004102254 Position # 1

- Date 1-29-03 Init JMC Video of the removal of each individual drum from the 7-pack
- Date 1-29-03 Init JMC Video of 360-degree rotation of individual drum to examine sides and bottom
- Date 1-29-03 Init JMC Video and photographs of the as-found condition of the top of each drum, including the vent filter and lid locking ring, paint on drum with close up pictures and video as necessary to identify conditions of special interest such as indentation , rust or buckling.
- Date 1-29-03 Init JMC Radiological surveys of individual drums to determine contamination levels
- Date 1-29-03 Init JMC Video of hand checking of filter tightness
- Date 1-29-03 Init JMC Video of hand checking of lock-chine tightness
- Video of As-Found conditions (Yes/No):
  - Y Filters all in place
  - UP Drum lid shape – domed up or down
  - N Evidence of drum lid paint cracking or flaking
  - N Dents or flat spots around the drum heads
  - N Any indentation, or buckling and depth measurements of any dents found
  - N Moisture or condensate on the outside of the drums or inside of the ICV
  - N Spots left by dried liquid on the drums, ICV walls or ICV bottom
  - N Rust on drums
- Information to Record During Drum Repackaging
- Date 1-29-03 Init JMC Video of drums placement into a suitable overpack for return to storage at RWMC.
- Date 1-29-03 Init JMC Documentation of drum numbers and associated overpack number. IDFRXWB030001
- Date 1/31/03 Init BM – ~~Video slitting of bags around drums~~ in the overpacks. No Bag – BM Since No contamination on drum

TRUPACT-157 Examination Engineer's Log

Drum # IDRF004002801 Position # 3

- Date 1.29.03 Init JMC Video of the removal of each individual drum from the 7-pack
- Date 1-29-03 Init JMC Video of 360-degree rotation of individual drum to examine sides and bottom
- Date 1-29-03 Init JMC Video and photographs of the as-found condition of the top of each drum, including the vent filter and lid locking ring, paint on drum with close up pictures and video as necessary to identify conditions of special interest such as indentation , rust or buckling.
- Date 1-29-03 Init JMC Radiological surveys of individual drums to determine contamination levels
- Date 1-29-03 Init JMC Video of hand checking of filter tightness
- Date 1-29-03 Init JMC Video of hand checking of lock-chine tightness
- Video of As-Found conditions (Yes/No):
  - Y Filters all in place
  - DN Drum lid shape – domed up or down
  - N Evidence of drum lid paint cracking or flaking
  - N Dents or flat spots around the drum heads
  - N Any indentation, or buckling and depth measurements of any dents found
  - N Moisture or condensate on the outside of the drums or inside of the ICV
  - N Spots left by dried liquid on the drums, ICV walls or ICV bottom
  - N Rust on drums
- Information to Record During Drum Repackaging
- Date 1.29.03 Init JMC Video of drums placement into a suitable overpack for return to storage at RWMC.
- Date 1.29.03 Init JMC Documentation of drum numbers and associated overpack number. # SWB # IDRFXWB030001
- Date 1/31/03 Init JMC Video slitting of bags around drums in the overpacks. NO Bag SWB Since No Contamination on drum.

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Drum # IDRF004101890 Position # 4

- Date 1.29.03 Init JMC Video of the removal of each individual drum from the 7-pack
- Date 1.29.03 Init JMC Video of 360-degree rotation of individual drum to examine sides and bottom
- Date 1.29.03 Init JMC Video and photographs of the as-found condition of the top of each drum, including the vent filter and lid locking ring, paint on drum with close up pictures and video as necessary to identify conditions of special interest such as indentation , rust or buckling.
- Date 1.29.03 Init JMC Radiological surveys of individual drums to determine contamination levels
- Date 1.29.03 Init JMC Video of hand checking of filter tightness
- Date 1.29.03 Init JMC Video of hand checking of lock-chine tightness
- Video of As-Found conditions (Yes/No):
  - Y Filters all in place
  - UP Drum lid shape – domed up or down
  - N Evidence of drum lid paint cracking or flaking
  - N Dents or flat spots around the drum heads
  - N Any indentation, or buckling and depth measurements of any dents found
  - N Moisture or condensate on the outside of the drums or inside of the ICV
  - N Spots left by dried liquid on the drums, ICV walls or ICV bottom
  - N Rust on drums
- Information to Record During Drum Repackaging
- Date 1.29.03 Init JMC Video of drums placement into a suitable overpack for return to storage at RWMC.
- Date 1.29.03 Init JMC Documentation of drum numbers and associated overpack number. SWB IDRFXWB03000
- Date 1/31/03 Init JMC Video ~~slitting~~ of bags around drums in the overpacks. No Bag Cut Since No Contamination on drum

TRUPACT-157 Examination Engineer's Log

Drum # IDRF004002790 Position # 5

- Date 1.30.03 Init JMC 3.3.03 Video of the removal of each individual drum from the 7-pack
- Date 1.30.03 Init JMC Video of 360-degree rotation of individual drum to examine sides and bottom
- Date 1.30.03 Init JMC Video and photographs of the as-found condition of the top of each drum, including the vent filter and lid locking ring, paint on drum with close up pictures and video as necessary to identify conditions of special interest such as indentation , rust or buckling.
- Date 1.30.03 Init JMC Radiological surveys of individual drums to determine contamination levels
- Date 1.30.03 Init JMC Video of hand checking of filter tightness
- Date 1.30.03 Init JMC Video of hand checking of lock-chine tightness
- Video of As-Found conditions (Yes/No):
  - Y Filters all in place
  - UP Drum lid shape – domed up or down
  - N Evidence of drum lid paint cracking or flaking
  - N Dents or flat spots around the drum heads
  - MINOR JMC 3.3.03 Any indentation, or buckling and depth measurements of any dents found
  - N Moisture or condensate on the outside of the drums or inside of the ICV
  - N Spots left by dried liquid on the drums, ICV walls or ICV bottom
  - N Rust on drums
- Information to Record During Drum Repackaging
- Date 1.30.03 Init JMC Video of drums placement into a suitable overpack for return to storage at RWMC.
- Date 1.30.03 Init JMC Documentation of drum numbers and associated overpack number. SWB IDRFXWB 030002
- Date 1/31/03 Init [illegible] ~~Video slitting~~ of bags around drums in the overpacks. No Bag – [illegible] Since No Contamination on drum

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Drum # IDRF741202484 Position # 6

- Date 1·30·03 Init JMC Video of the removal of each individual drum from the 7-pack
- Date 1·30·03 Init JMC Video of 360-degree rotation of individual drum to examine sides and bottom
- Date 1·30·03 Init JMC Video and photographs of the as-found condition of the top of each drum, including the vent filter and lid locking ring, paint on drum with close up pictures and video as necessary to identify conditions of special interest such as indentation , rust or buckling.
- Date 1·30·03 Init JMC Radiological surveys of individual drums to determine contamination levels
- Date 1·30·03 Init JMC Video of hand checking of filter tightness
- Date 1·30·03 Init JMC LOOSE - The gap was small Video of hand checking of lock-chine tightness
- Video of As-Found conditions (Yes/No):
  - Y Filters all in place
  - UP Drum lid shape – domed up or down
  - No Evidence of drum lid paint cracking or flaking
  - N Dents or flat spots around the drum heads
  - N Any indentation, or buckling and depth measurements of any dents found
  - N Moisture or condensate on the outside of the drums or inside of the ICV
  - N Spots left by dried liquid on the drums, ICV walls or ICV bottom
  - N Rust on drums
- Information to Record During Drum Repackaging
- Date 1·30·03 Init JMC Video of drums placement into a suitable overpack for return to storage at RWMC.
- Date 1·30·03 Init JMC Documentation of drum numbers and associated overpack number. 30003
- Date _____ Init _____ Video slitting of bags around drums in the overpacks.

The bag was not slit. Bob Miklos said the drum will be re examined prior to shipment to WIPP. The drum is in SWB# IDRFXWB030007. -BKO 2/3/03

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Drum # IDRF 7412020 88 Position # 7

- Date 1.30.03 Init JMC Video of the removal of each individual drum from the 7-pack
- Date 1.30.03 Init JMC Video of 360-degree rotation of individual drum to examine sides and bottom
- Date 1.30.03 Init JMC Video and photographs of the as-found condition of the top of each drum, including the vent filter and lid locking ring, paint on drum with close up pictures and video as necessary to identify conditions of special interest such as indentation , rust or buckling.
- Date 1.30.03 Init JMC Radiological surveys of individual drums to determine contamination levels
- Date _____ Init NO Video of hand checking of filter tightness
- Date _____ Init NO Video of hand checking of lock-chine tightness
- Video of As-Found conditions (Yes/No):
  - Y Filters all in place
  - DN Drum lid shape – domed up or down
  - N Evidence of drum lid paint cracking or flaking
  - N Dents or flat spots around the drum heads
  - N Any indentation, or buckling and depth measurements of any dents found
  - N Moisture or condensate on the outside of the drums or inside of the ICV
  - N Spots left by dried liquid on the drums, ICV walls or ICV bottom
  - Y-MINOR Rust on drums
- Information to Record During Drum Repackaging
- Date 1.30.03 Init JMC Video of drums placement into a suitable overpack for return to storage at RWMC. IDRFXWB030003
- Date 1.30.03 Init JMC Documentation of drum numbers and associated overpack number.
- Date 1/31/03 Init MM Video ~~slitting~~ of bags around drums in the overpacks. No Bag since No contamination found.

TRUPACT-157 Examination Engineer's Log

Drum # IDRF741205405 Position # 8

- Date 1.30.03 Init JM Video of the removal of each individual drum from the 7-pack
- Date 1.30.03 Init JM Video of 360-degree rotation of individual drum to examine sides and bottom
- Date 1.30.03 Init JM Video and photographs of the as-found condition of the top of each drum, including the vent filter and lid locking ring, paint on drum with close up pictures and video as necessary to identify conditions of special interest such as indentation , rust or buckling.
- Date 1.30.03 Init JM Radiological surveys of individual drums to determine contamination levels
- Date 1.30.03 Init JM Video of hand checking of filter tightness
- Date 1.30.03 Init JMC Video of hand checking of lock-chine tightness
- Video of As-Found conditions (Yes/No):
  - Y Filters all in place
  - UP Drum lid shape – domed up or down
  - N Evidence of drum lid paint cracking or flaking
  - N Dents or flat spots around the drum heads
  - Yes Any indentation, or buckling and depth measurements of any dents found
  - N Moisture or condensate on the outside of the drums or inside of the ICV
  - N Spots left by dried liquid on the drums, ICV walls or ICV bottom
  - N Rust on drums
- Information to Record During Drum Repackaging
- Date 1.30.03 Init JMC Video of drums placement into a suitable overpack for return to storage at RWMC.
- Date 1.30.03 Init JMC Documentation of drum numbers and associated overpack number. IDRFXWD030003
- Date 1/31/03 Init BMW Video ~~slitting of bags~~ around drums in the overpacks. No Bag Slits

No Contamination found - BMW

TRUPACT-157 Examination Engineer's Log

Drum # IDRF7412O1615 Position # 9

- Date 1.30.03 Init JMC Video of the removal of each individual drum from the 7-pack
- Date 1.30.03 Init JMC Video of 360-degree rotation of individual drum to examine sides and bottom
- Date 1.30.03 Init JMC Video and photographs of the as-found condition of the top of each drum, including the vent filter and lid locking ring, paint on drum with close up pictures and video as necessary to identify conditions of special interest such as indentation , rust or buckling.
- Date 1.30.03 Init JMC Radiological surveys of individual drums to determine contamination levels
- Date 1.30.03 Init JMC Video of hand checking of filter tightness
- Date 1.30.03 Init JMC Video of hand checking of lock-chine tightness
- Video of As-Found conditions (Yes/No):
  - Y Filters all in place
  - DN Drum lid shape – domed up or down
  - N Evidence of drum lid paint cracking or flaking
  - N Dents or flat spots around the drum heads
  - N Any indentation, or buckling and depth measurements of any dents found
  - N Moisture or condensate on the outside of the drums or inside of the ICV
  - N Spots left by dried liquid on the drums, ICV walls or ICV bottom
  - N Rust on drums
- Information to Record During Drum Repackaging
- Date 1.30.03 Init JMC Video of drums placement into a suitable overpack for return to storage at RWMC.
- Date 1.30.03 Init JMC Documentation of drum numbers and associated overpack number. IDRFXWB030003
- Date 1/31/03 Init JMC Video ~~slitting of bags~~ around drums in the overpacks. Since No Contamination found on Drum — JMC BRW 2/28/03

TRUPACT-157 Examination Engineer's Log

Drum # IDRF741201718 Position # 10

- Date 1.30.03 Init JMC Video of the removal of each individual drum from the 7-pack
- Date 1.30.03 Init JMC Video of 360-degree rotation of individual drum to examine sides and bottom
- Date 1.30.03 Init JMC Video and photographs of the as-found condition of the top of each drum, including the vent filter and lid locking ring, paint on drum with close up pictures and video as necessary to identify conditions of special interest such as indentation , rust or buckling.
- Date 1.30.03 Init JMC Radiological surveys of individual drums to determine contamination levels
- Date 1.30.03 Init JMC Video of hand checking of filter tightness
- Date 1.30.03 Init JMC Video of hand checking of lock-chine tightness
- Video of As-Found conditions (Yes/No):
  - Y Filters all in place
  - UP Drum lid shape – domed up or down
  - N Evidence of drum lid paint cracking or flaking
  - N Dents or flat spots around the drum heads
  - N Any indentation, or buckling and depth measurements of any dents found
  - N Moisture or condensate on the outside of the drums or inside of the ICV
  - N Spots left by dried liquid on the drums, ICV walls or ICV bottom
  - N Rust on drums
- Information to Record During Drum Repackaging
- Date 1.30.03 Init JMC Video of drums placement into a suitable overpack for return to storage at RWMC.
- Date 1.30.03 Init JMC Documentation of drum numbers and associated overpack number. IDRFXWB030004
- Date 1/31/03 Init BNW Video slitting of ~~bags around~~ drums in the overpacks.

No Bag since No contamination found on drum — BNW 2/18/03

TRUPACT-157 Examination Engineer's Log

Drum # 07422/338 IDRF7422/1338 Position # 11

- Date 1.30.03 Init JM Video of the removal of each individual drum from the 7-pack
- Date 1.30.03 Init JM Video of 360-degree rotation of individual drum to examine sides and bottom
- Date 1.30.03 Init JM Video and photographs of the as-found condition of the top of each drum, including the vent filter and lid locking ring, paint on drum with close up pictures and video as necessary to identify conditions of special interest such as indentation , rust or buckling.
- Date 1.30.03 Init JM Radiological surveys of individual drums to determine contamination levels
- Date 1.30.03 Init JM Video of hand checking of filter tightness
- Date 1.30.03 Init JM Video of hand checking of lock-chine tightness
- Video of As-Found conditions (Yes/No):
  - Y Filters all in place
  - DN Drum lid shape – domed up or down
  - Yes - Rust only Evidence of drum lid paint cracking or flaking
  - No Dents or flat spots around the drum heads
  - No Any indentation, or buckling and depth measurements of any dents found
  - No Moisture or condensate on the outside of the drums or inside of the ICV
  - No Spots left by dried liquid on the drums, ICV walls or ICV bottom
  - Yes Rust on drums
- Information to Record During Drum Repackaging
- Date 1/30/03 Init BN Video of drums placement into a suitable overpack for return to storage at RWMC.
- Date 1/30/03 Init BN Documentation of drum numbers and associated overpack number. IDRFXWB030005
- Date NA - No bag Init _____ Video slitting of bags around drums in the overpacks. BN 1-30-03

Since No contamination found on drum. - BN

TRUPACT-157 Examination Engineer's Log

Drum # IDRF074700394 Position # 12

- Date 1-30-03 Init JMC Video of the removal of each individual drum from the 7-pack
- Date 1-30-03 Init JMC Video of 360-degree rotation of individual drum to examine sides and bottom
- Date 1-30-03 Init JMC Video and photographs of the as-found condition of the top of each drum, including the vent filter and lid locking ring, paint on drum with close up pictures and video as necessary to identify conditions of special interest such as indentation , rust or buckling.
- Date 1-30-03 Init JMC Radiological surveys of individual drums to determine contamination levels
- Date 1-30-03 Init JMC Video of hand checking of filter tightness
- Date 1-30-03 Init JMC Video of hand checking of lock-chine tightness
- Video of As-Found conditions (Yes/No):
  - Y Filters all in place
  - UP Drum lid shape – domed up or down
  - No Evidence of drum lid paint cracking or flaking
  - No Dents or flat spots around the drum heads
  - No Any indentation, or buckling and depth measurements of any dents found
  - No Moisture or condensate on the outside of the drums or inside of the ICV
  - No Spots left by dried liquid on the drums, ICV walls or ICV bottom
  - No Rust on drums
- Information to Record During Drum Repackaging
- Date 1-30-03 Init JMC Video of drums placement into a suitable overpack for return to storage at RWMC.
- Date 1-30-03 Init JMC Documentation of drum numbers and associated overpack number. IDRFXWB030006
- Date 1/31/03 Init BLW Video ~~slitting of bags~~ around drums in the overpacks. BLW 2/28/03 Since No Contamination found on drum - BLW

TRUPACT-157 Examination Engineer's Log

Drum # IDRF074700411 Position # 13

- Date 1.30.03 Init JMC Video of the removal of each individual drum from the 7-pack
- Date 1.30.03 Init JMC Video of 360-degree rotation of individual drum to examine sides and bottom
- Date 1.30.03 Init JMC Video and photographs of the as-found condition of the top of each drum, including the vent filter and lid locking ring, paint on drum with close up pictures and video as necessary to identify conditions of special interest such as indentation , rust or buckling.
- Date 1.30.03 Init JMC Radiological surveys of individual drums to determine contamination levels
- Date 1.30.03 Init JMC Video of hand checking of filter tightness
- Date 1.30.03 Init JMC Video of hand checking of lock-chine tightness
- Video of As-Found conditions (Yes/No):
  - Y Filters all in place
  - UP Drum lid shape – domed up or down
  - N Evidence of drum lid paint cracking or flaking
  - N Dents or flat spots around the drum heads
  - N Any indentation, or buckling and depth measurements of any dents found
  - JMC 3.3.03 No ~~Yes - dry drops on top~~ JMC Moisture or condensate on the outside of the drums or inside of the ICV
  - Yes - dry drops on top Spots left by dried liquid on the drums, ICV walls or ICV bottom
  - N Rust on drums
- Information to Record During Drum Repackaging
- Date 1.30.03 Init JMC Video of drums placement into a suitable overpack for return to storage at RWMC.
- Date 1.30.03 Init JMC Documentation of drum numbers and associated overpack number. IDRF~~0~~WD030006
- Date 1/31/03 Init BNW ~~Video slitting of bags~~ around drums in the overpacks. No Bag since No Contamination found on drum — BNW 2/28/03

P2 17

TRUPACT-157 Examination Engineer's Log

Drum # 1DRF741204650 Position # 14

- Date 1·30·03 Init JMC Video of the removal of each individual drum from the 7-pack
- Date 1·30·03 Init JMC Video of 360-degree rotation of individual drum to examine sides and bottom
- Date 1.30.03 Init JMC Video and photographs of the as-found condition of the top of each drum, including the vent filter and lid locking ring, paint on drum with close up pictures and video as necessary to identify conditions of special interest such as indentation , rust or buckling.
- Date 1·30·03 Init JMC Radiological surveys of individual drums to determine contamination levels
- Date 1·30·03 Init JMC Video of hand checking of filter tightness
- Date 1·30·03 Init JMC Video of hand checking of lock-chine tightness
- Video of As-Found conditions (Yes/No):
    - Y Filters all in place
    - UP Drum lid shape – domed up or down
    - N Evidence of drum lid paint cracking or flaking
    - NO Dents or flat spots around the drum heads
    - Yes Any indentation, or buckling and depth measurements of any dents found
    - NO Moisture or condensate on the outside of the drums or inside of the ICV
    - NO Spots left by dried liquid on the drums, ICV walls or ICV bottom
    - NO Rust on drums
- Information to Record During Drum Repackaging
- Date 1·30·03 Init JMC Video of drums placement into a suitable overpack for return to storage at RWMC.
- Date 1·30·03 Init JMC Documentation of drum numbers and associated overpack number. 1DRFXWD030004 ~~NW~~ NE (JMC) CORNER
- Date 1/31/03 Init BMO Vid~~eo slitting of bags~~ around drums in the overpacks.
  NO Bag since No Contamination found on drum – ~~BMO~~ BMO 2/28/03

See page for each individual Drum BNO/jms 1/29/03

Date _____ Init _____ Video of hand checking of lock-chine tightness

2.4 Information to Record During Drum Repackaging

- Date _____ Init _____ Video of drums removal from the payload.
- Date _____ Init _____ Video of drums placement into a suitable overpack for return to storage at RWMC.
- Date _____ Init _____ Documentation of drum numbers and associated overpack number.

2.5 ICV Examination and Reinstallation of Lid Following Payload Removal

- Date 1/28/03 Init BNO Video examination of the internals of the ICV documenting as found conditions
- Date 1/28/03 Init BNO No Fixations used - BNO 2/28/03 Documentation, written and video, of application of any contamination fixation materials (fixatives may affect ability to determine surface contamination of the payload and ICV)
- Date 1/28/03 Init BNO Radiological surveys of ICV internal documenting the extent of contamination for disposal information
- Date 1/28/03 Init BNO Radiological surveys of accessible surfaces of ICV and OCA following removal of any radiological contamination systems prior to removal of ICV from the OCA.
- Date 1/28/03 Init BNO Video of lid installation

2.6 Information to Record During ICV Removal from OCA

- Date 1/28/03 Init BNO Video of removal of ICV from OCA to show ICV external and OCA internal as-found conditions
- Date 1/28/03 Init BNO Radiological surveys of ICV external surfaces as ICV is extracted from the OCA
- Date 1/28/03 Init BNO Radiological surveys of OCA internal surfaces following ICV removal.

2.7 Information to Record During OCA Lid Installation and OCA Removal from Hot Shop

- Date 1/29/03 Init BNO Removal of OCA from TAN Hot Shop
- Date 1/29/03 Init BNO - performed on 1/28/03 Internal and external OCA surveys (outside of ICV, underside of OCA lid)

underside of OCA lid was not resurveyed since it was previously surveyed clean - BNO Doug Wales & Kevin Streeper concurred.

- Late entry - RCT's confirmed that smears of the underside of the OCA lid were taken. - BNO 1/29/03

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Last page-pno

TRUPACT-157 Examination Engineer 'sLog

- Date 1/30/03 Init PNO Video and documentation of all surveys of OCA (internal and external) during removal of contamination barriers for removal from the Hot Shop

- Date _____ Init _____ ~~Video of OCA removal from the~~ Hot Shop. Duplicate check SA previous pg.

PNO 1/30/03

Appendix E

Sequence of Operations and Equipment Used

Appendix E

Sequence of Operations and Equipment Used

Sequence of Events Prior to Recovery Operations

August 23, 2002, Transuranic waste shipment IN020271 shipped from INEEL to WIPP

August 25, 2002, 1:30AM. Transport truck involved in collision with privately owned vehicle.

August 25, 2002, 6:30 a.m. Shipment arrived at WIPP and processing was begun.

Initial RAF sample drawn as part of receipt processing indicates elevated alpha contamination within ICV.

August 26, 2002. Three follow-up RAF samples were collected and counting begun. Samples indicated elevated airborne contamination within ICV.

August 28, 2002. TRUPACT-II 157 was resealed and returned to the INEEL.

August 29, 2002. Shipment arrived at RWMC and placed in storage.

October 10, 2002. Draft recovery plan submitted to DOE-ID.

October 11, 2002. DOE-ID letter of direction to proceed received by contractor.

October 17, 2002. Revision 1 of recovery plan issued.

December 2, 2002. Operational readiness review completed and approval to start operations received on schedule.

Early December. Issues developed with respect to obtaining regulatory permits to perform recovery operations.

December 24, 2002. DOE-ID issued direction to develop revised recovery plan by January 16, 2003.

January 16, 2003. Revised recovery plan issued.

January 23, 2003. DOE-ID contracting officer issued letter directing execution of recovery plan.

January 27, 2003. Readiness achieved for operations at TAN. TRUPACT-II arrives and recovery activities begin.

TRUPACT-157 Recovery Operations

January 27, 2003

9:50 a.m. TRUPACT-157 was shipped from RWMC to the TAN Hot Shop on January 27, 2003, and placed in the TAN Hot Shop (Figure E-1).

PD03-0078-035

Figure E-1. TRUPACT 157 handling in the hot shop.

CBFO was contacted to clarify when a CBFO representative needed to be present for the recovery operation. Direction received from CBFO was for the representative to be present during payload removal.

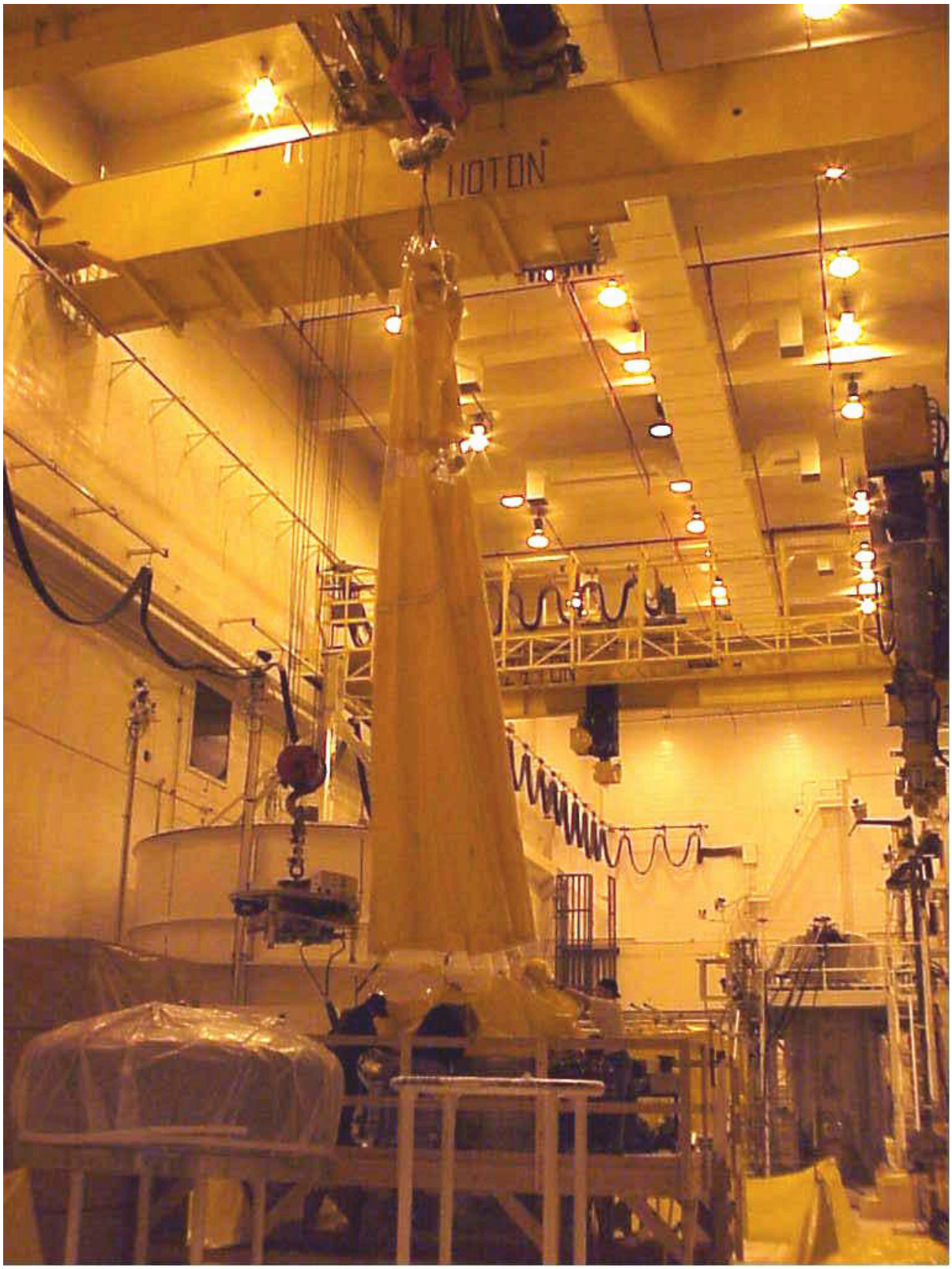
10:21 a.m. Outer Containment vent port plug tamper indicating device was not intact. One wire had pulled out of the crimp seal. The tamper indicating device on the OCV lid lock ring bolt was still intact. Received WIPP direction to proceed.

13:07 p.m. Removed the OCV Lid (Figure E-2).

PD03-0078-03

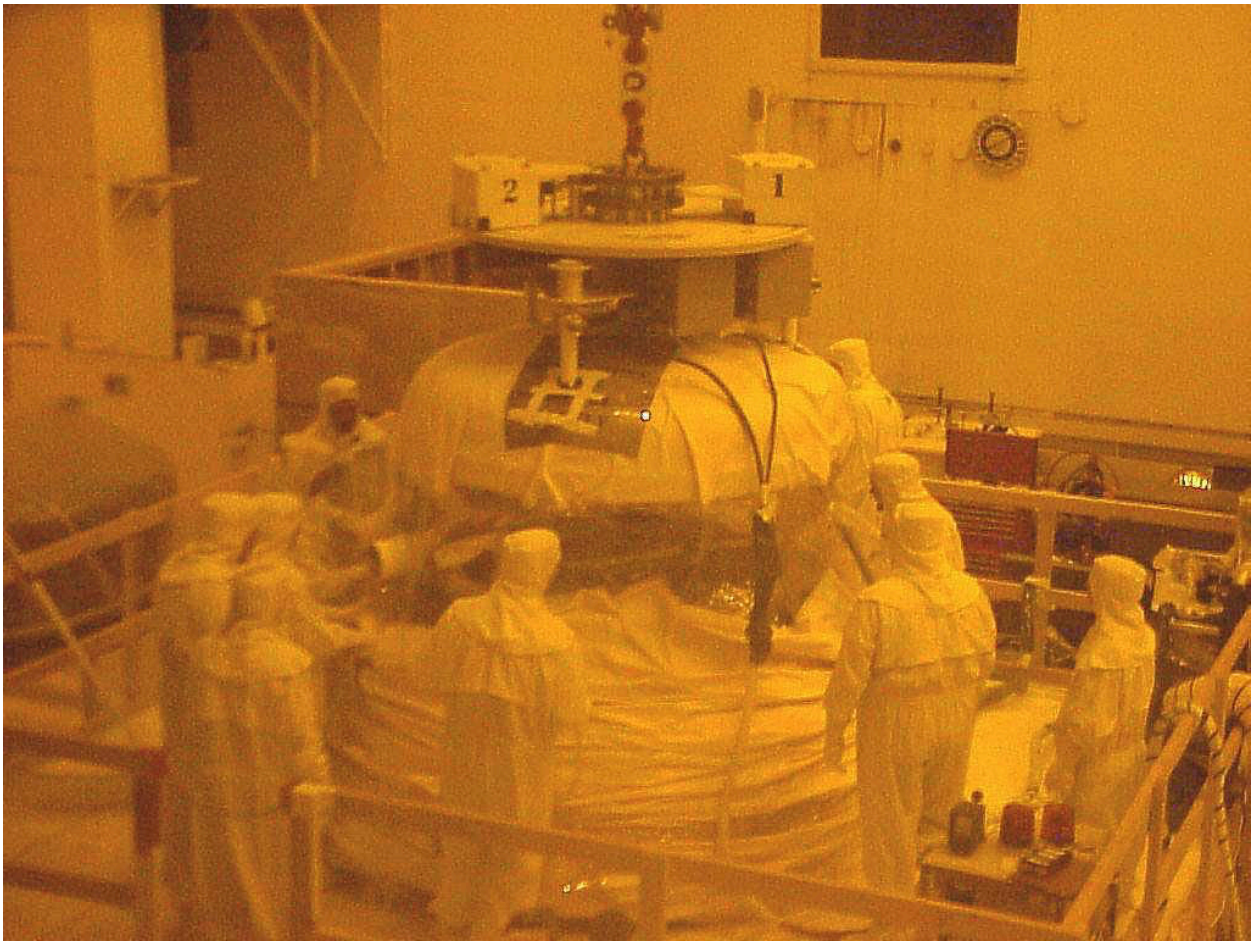
Figure E-2. Removal of OCV lid.

- Installed sleeving on the ICV (see Figure E-3).



PD03-0078-006

Figure E-3. Sleeve installation on ICV.



PD03-0078-008

Figure E-4. Air sampling of ICV interior and payload.

- ICV lid lifted approximately 18" and air sampling performed on internal ICV atmosphere. Sampling performed for 15 minutes using calibrated pumps (Figure E-4).

4:20 p.m. Radiological smears of OCV and ICV are within allowable limits (less than 20 dpm/100 cm^2 alpha and less than 1,000 dpm/100 cm^2 beta-gamma).

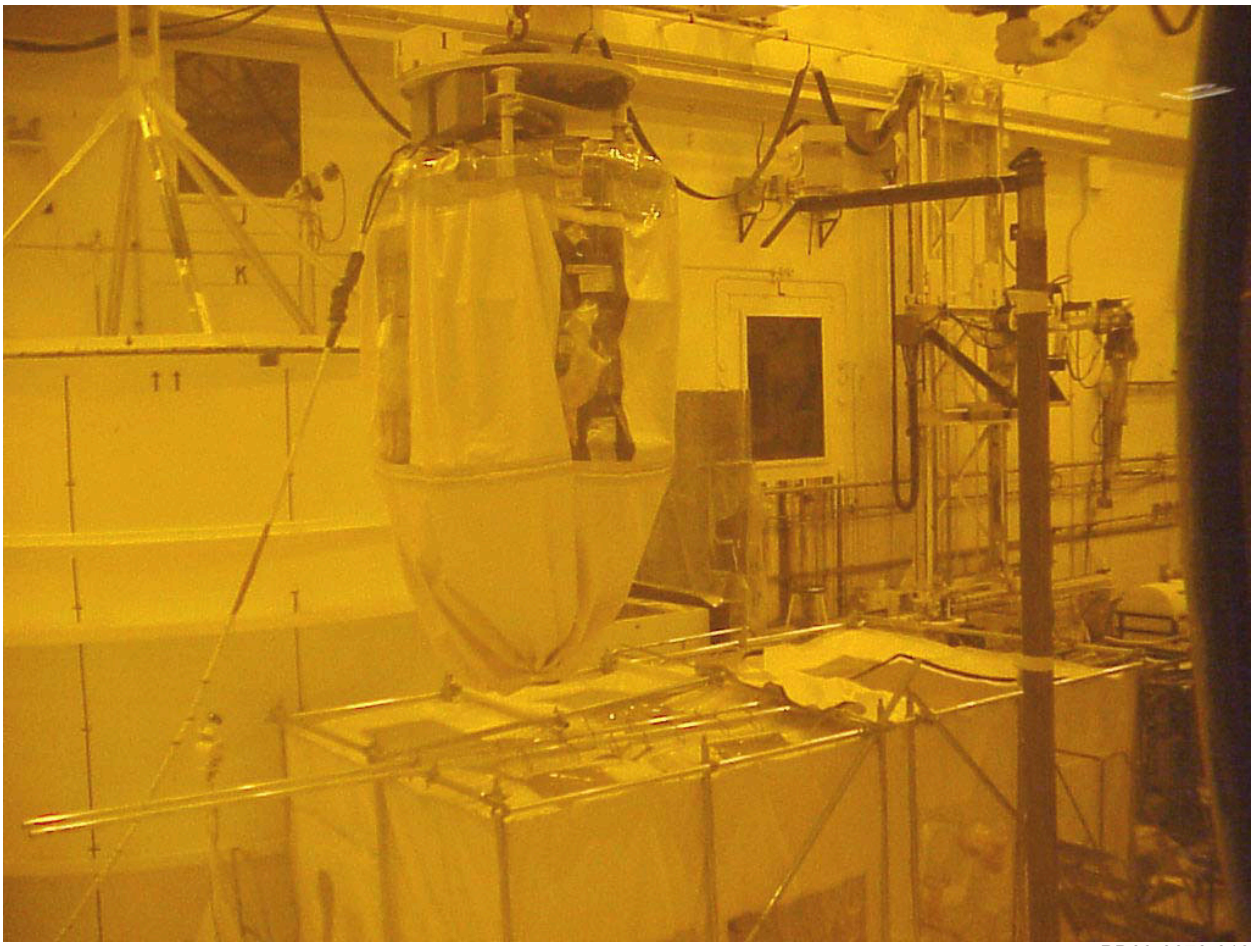
4:23 p.m. Air sampling results indicate only naturally occurring activity. Levels of contamination reported by WIPP are not seen at INEEL based on this initial sampling. Elevated radon levels in sample, compared to normal background, confirm that sample air was drawn from ICV interior.

6:00 p.m. Operations ceased until WIPP representative was onsite for payload removal sequence per direction from WIPP.

January 28, 2003

8:35 a.m. Additional contamination surveys of ICV and accessible portions of payload. All radiological surveys are within allowable limits (less than 20 dpm/100 cm^2 alpha and less than 1000 dpm/100 cm^2 beta-gamma).

12:22 p.m. TRUPACT-157 payload lifted from ICV and placed into radiological tent (Figure E-5).



PD03-0078-013

Figure E-5. Transfer of payload into tent.

4:32 p.m. ICV sleeving removed and lid reinstalled. ICV removed from OVA and packaged in box. Radiological surveys all within allowable limits. The inside of the ICV lid is shown in Figure E-6.

5:57 p.m. Outer Containment Vessel (OCV) surveyed and results within allowable limits. Lid installation completed.

PD03-0078-032

Figure E-6. Underside of ICV lid.

January 29, 2003

10:04 a.m. OCV removed from Hot Shop and reloaded onto transport trailer (Figure E-7).

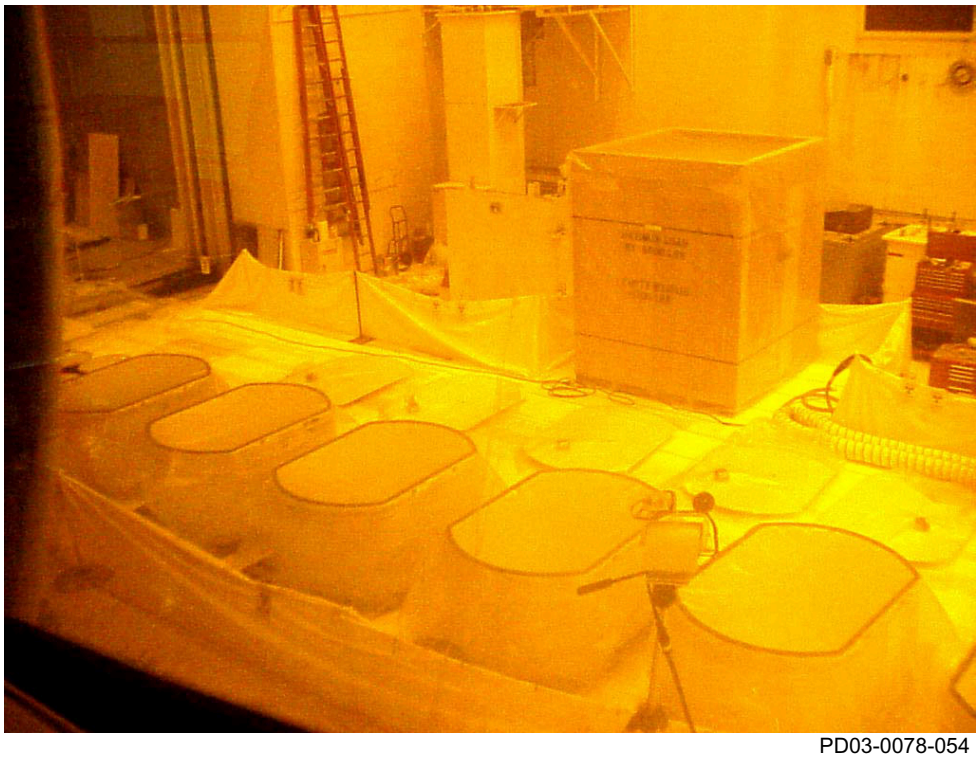
PD03-0078-0039

Figure E-7. Transfer of OCV from hot shop onto transport trailer

- Hot Shop reconfigured to support TRUPACT-157 disassembly operations. Figure E-8 show the Standard waste boxes (SWBs) staged for receipt of waste drums. Figure E-9 shows the payload just prior to disassembly.

3:45 p.m. Initiated payload disassembly operation. Four drums from top seven-pack removed. Detailed radiological contamination surveys (12 locations on each drum) are all within allowable limits (less than 20 dpm/100 cm^2 alpha and less than 1000 dpm/100 cm^2 beta-gamma). Figure E-10 is a photo of smears taken of the first drum after it had been examined and it had left the tent.

- All drums were checked for filter and lock ringbolt tightness using finger-tight criteria. A container integrity inspection was performed by SWEPP operators. No discrepancies noted.



PD03-0078-054

Figure E-8. SWBs staged for receipt of waste drums.

PD03-0078-067

Figure E-9. Payload prior to disassembly.

PD03-0078-072

Figure E-10. Smears of the first drum after leaving the tent.

January 30, 2003

8:50 a.m. Fifth and sixth drum removed from top seven-pack layer. Detailed radiological contamination surveys are within allowable limits (less than 20 dpm/100 cm^2 alpha and less than 1,000 dpm/100 cm^2 beta-gamma). Finger tightness checks of filters and lock ringbolts do not identify any discrepancies. Container integrity determined to be adequate.

9:22 a.m. Initial smears on the lid of the seventh drum (IDRF741202484) were: 9 dpm/100 cm^2 alpha (drum filter area), 3 dpm/100 cm^2 alpha (drum lid), 19 dpm/100 cm^2 alpha (drum lid), and 39 dpm/100 cm^2 alpha (drum lid around bar code label). The smear of 39 dpm/100 cm^2 alpha was above allowable limits. A photo of the first smear being taken is shown in Figure E-11. No other contamination above allowable limits was detected on other portions of the drum.

- Three follow-up lid smears were taken and the results were: 110 dpm/100 cm^2 alpha, 13 dpm/100 cm^2 alpha, and 33 dpm/100 cm^2 alpha (drum lid around filter area). Two of these smears were above the limit of 20 dpm/100 cm^2 alpha.

10:33 a.m. A glycerin-based fixative was applied to the drum lid to prevent any contamination spread.

- 10:35 a.m. Drum IDRF741202484 lock ring bolt was found to be loose (about 5 degrees rotation to the extent allowed by the tamper seal wire).

- Finger-tightness check of filter does not indicate any discrepancy. No container integrity discrepancies were noted.

11:01 a.m. Drum IDRF741202484 bagged in plastic bagging. During removal, operator notes that the lock ring could be rotated about 2-inches (bagging prevents further rotation). Drum placed in standard waste box. Contamination surveys of both the top and bottom of the drum ring are within allowable limits.

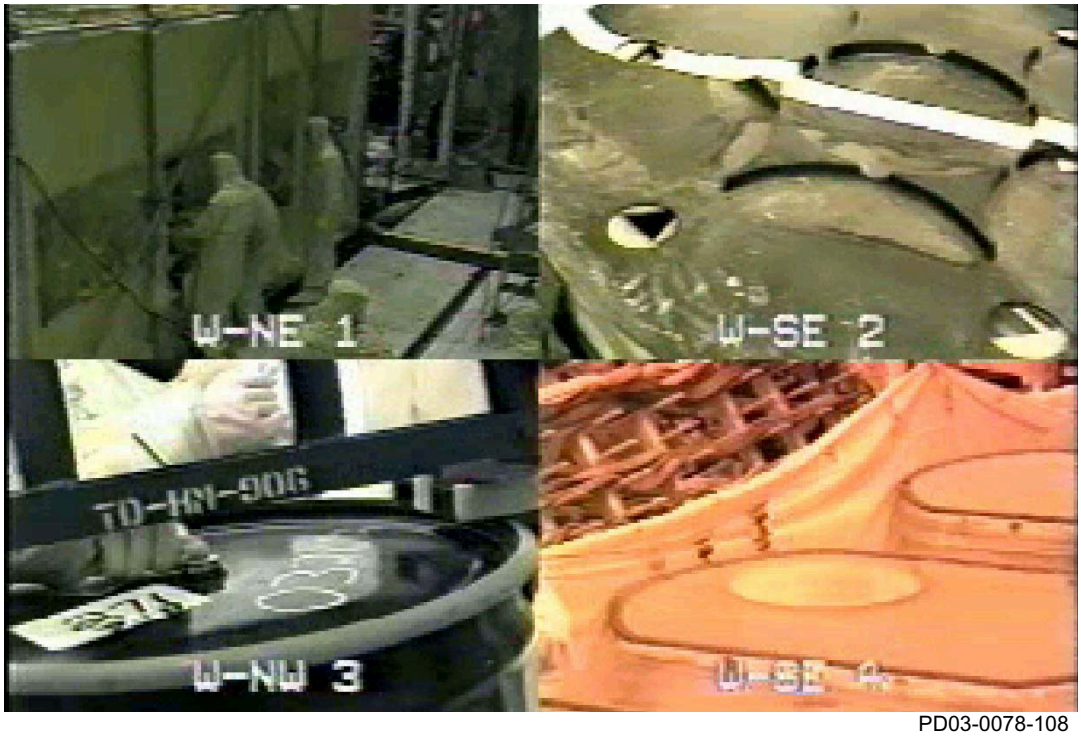
1:00 p.m. Processing of bottom seven-pack is initiated with removal of slip sheet and reinforcement sheet.

1:05 p.m. Eighth and ninth drums removed from payload. Radiological contamination surveys are all less than allowable limits (less than 20 dpm/100 cm^2 alpha and less than 1000 dpm/100 cm^2 beta-gamma). Finger-tightness checks of filters and lock ringbolts do not identify any discrepancies. No container integrity discrepancies were noted. Figure E-12 shows the ninth drum being lowed into the SWB.

2:08 p.m. Tenth drum (IDRF74700411) radiological contamination surveys are all less than allowable limits (less than 20 dpm/100 cm^2 alpha and less than 1000 dpm/100 cm^2 beta-gamma). Finger-tightness checks of filter and bolt do not identify any discrepancies. However, visual observation of jam nut indicates the nut was not seated against the lock ring. No container integrity discrepancies were noted.

2:48–6:07 p.m. Processing of eleventh through fourteenth drums completed. All radiological contamination surveys are within allowable limits (less than 20 dpm/100 cm^2 alpha and less than 1,000 dpm/100 cm^2 beta-gamma). Finger-tightness checks of the filters and lock ringbolts do not identify any discrepancies. No container integrity discrepancies were noted. Drum handling operations at 5:00 p.m. are shown in Figure E-13.

4:50 p.m. Gamma scans of plastic wrap from payload discover no contamination above background.

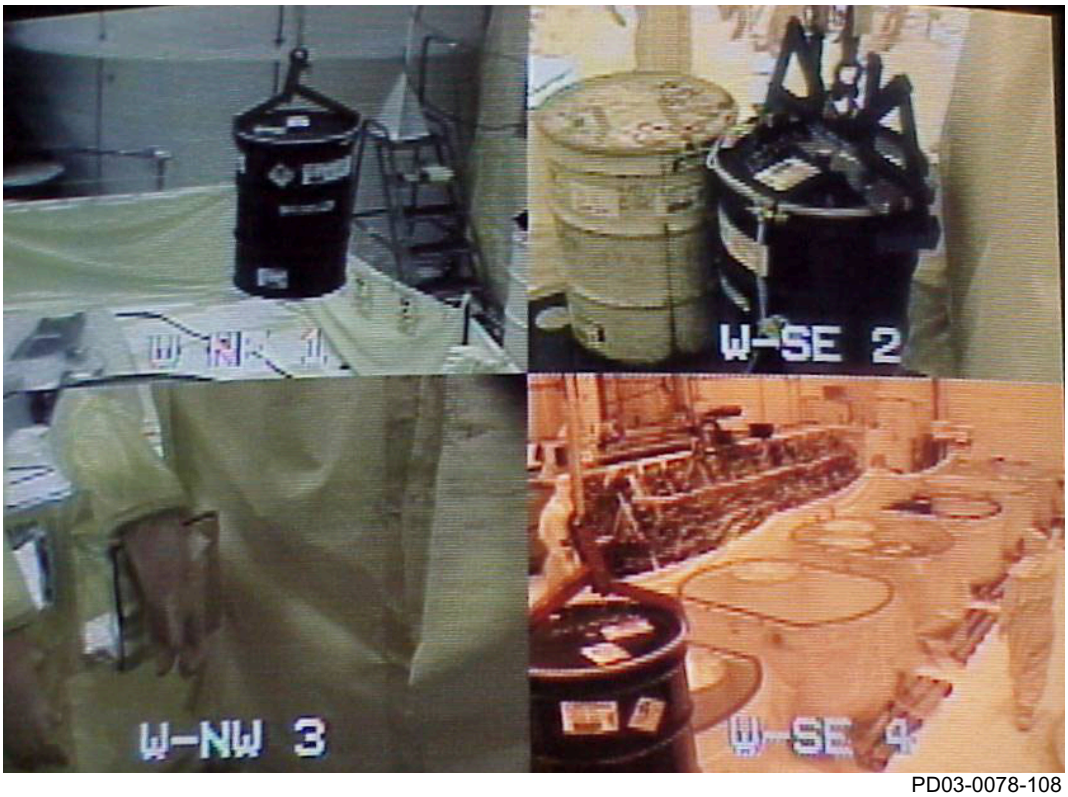


PD03-0078-108

Figure E-11. Drum 2484 Smear 1.

PD03-0078-093

Figure E-12. Ninth drum being lowered into an SWB.



PD03-0078-108

Figure E-13. Drum handling operations.

January 31, 2003

7:00 a.m – 7:00 p.m. Completed closure of five of six SWBs containing the TRUPACT-157 payload drums. Figure E-14 shows SWB IDRFXWB030001 prior to closure.

- Received direction from DOE-ID to recover the contaminated drum (IDRF741202484) from the standard waste box and place in separate SWB for future testing. Direction also received to keep the OCV and ICV in storage at RWMC pending future decisions.

- Relocated completed SWBs from Hot Shop to Warm Shop for staging.

PD03-0078-121

Figure E-14. IDRFXWB030001 with four drums of filter waste.

February 1-2, 2003

- Implemented procedural changes to TAN procedure to allow removal of contaminated drum.
- Modified procedure submitted to WIPP for approval.
- Modifications to WWIS to support SWB payload configuration changes.

February 3, 2003

Obtained WIPP approval of procedure changes.

7:00 a.m–2:43 p.m. Completed removal of contaminated drum and transfer into SWB #7 and lid closure.

3:10 p.m. SWBs #3 and #7 transferred out of hot shop to await transfer to RWMC.

3:45 p.m. Completed ICV box closure, and transferred onto transport trailer (Figure E-15).

4:54 p.m. Completed loading all seven SWBs and the ICV for transport to RWMC.

PD03-0079-05

Figure E-15. ICV in disposal box being loaded on transport trailer.

OCV transported to RWMC for storage (Figure E-16).

7:00 p.m. Radiological smears of slipsheets, remaining shrink-wrap, guide tubes, pallet, and containment tent completed. All results were less than allowable limits.

February 4, 2003

9:30 a.m. ICV and seven SWBs shipped to RWMC

PD03-0079-10

Figure E-16. Seven SWBs and ICV departing for RWMC.

- ICV and one SWB containing the contaminated drum IDRF741202484 stored in WMF-628
- Six SWBs delivered to Advanced Mixed Waste Treatment Project building WMF-618 for loading by the WIPP Mobile TRUPACT-II Loading Team.

February 5, 2003

WIPP Mobile Loading Team completes loading of six SWBs containing the TRUPACT-157 payload drums (minus one drum) into three TRUPACT-II's.

February 12, 2003

Assimilation, review, certification, and release of TRUPACT-II shipment containing the TRUPACT-157 payload (minus one drum) completed.

3:20 p.m. Shipment IN030001 leaves RWMC destined for WIPP (Figure E-17).

PD03-0080-01

Figure E-17. Loaded TRUPACT-II depart for WIPP.

February 13, 2003

Shipment IN030001 arrives at WIPP.

February 19, 2003

Six SWBs containing TRUPACT-157 payload (minus one drum) emplaced at WIPP.

Appendix F

Video Log of Recovery Operations

Appendix F

Video Log of Recovery Operations

Digital photos taken during operations, with descriptions have been interspersed throughout the report. Therefore, they have not been included in this appendix. Six remotely controlled cameras, one boroscope camera were used during the operations. One camera was recorded from the main monitor, and four of the cameras were recorded from a four-screen/split screen monitor starting on February 23, 2003. Twenty-nine videotapes were recorded during the recovery operations and are described in Table F-1. A more detailed summary of activities and elapsed tape times for the Main Monitor videotapes is provided in Table F-2.

Three segments of video showing the smears of drum IDRF741202484 are included in electronic MPEG movie format on this disk with the Appendices. They are the initial smears, initial smears of the drum bottom, and follow-up smears of the lid, that are included in the electronic copy of this report. A separate video of the entire processing sequence for drum IDRF741202484 is also provided on the disk.

Table F-1. Log of videotapes recorded during recovery operations.

Date	Main Monitor Tape No.	Time (24 hr format)	Split Screen Tape No.	Time	Activities / Notes / Observations
1/27/2003	1	1002 -- 1307			TRUPACT- 157 moved into hot shop, initial disassembly operations.
	2	1307 -- 1442, 1535 -- 1548, 1605 -- 1623			Remove OCV lid, vent port survey. Surveys inside ICV and air samples of ICV volume.
	3	1623 -- 1756			Remove ICV lid, visual and puppet CAM inspections of payload inside ICV.
1/28/2003	4	0833 -- 1257 (intermittent)	1SS	1225 -- 1428	Continue surveys of ICV and payload. Puppet CAM inspection of drum filters. Remove payload from ICV. Conduct surveys of payload.
	5	1259 -- 1330, 1341 -- 1417, 1618 -- 1702	2SS	1618 --	Payload into tent. ICV Sleeve removed, Inspect interior and rad surveys of inside of ICV. Power glitches cause videotape outages.
	6	1702 -- 1813	2SS	--1813	ICV reassembled and placed in disposal box. OCV reassembled
1/29/2003	7	0914 -- 1026, 1114 -- 1127, 1231 -- 1301	3SS	1234 -- 1444	OCV re-surveyed and moved out of hot shop. SWBs staged in hot shop.
	8	1301 -- 1418, 1501 -- 1546	4SS	1444 --	Video inspection of payload, remove wrapping and top slip sheet from payload.
	9	1546 --	4SS	--1643	Drum IDRF004102263 inspected and moved to SWB, Drum IDRF004002801 inspected.
	9	-- 1745	5SS	1643 --	IDRF004002801moved to SWB 0001. Drum IDRF004101890 inspected and moved to SWB 0001.
	10	1745 -- 1815	5SS	-- 1818	Drum IDRF004102254 inspected and moved to SWB 0001

Table F-1. (Continued).

Date	Main Monitor Tape No.	Time (24 hr format)	Split Screen Tape No.	Time	Activities / Notes / Observations
1/30/2003	11	0835 -- 1038	6SS	0836 -- 1035	Drum IDRF004002790 inspected and moved to SWB 0002. Video inspection of top pack lower slip sheet. Drum IDRF741202088 inspected and moved to SWB 0003. Drum IDRF741202484 inspection begins 0952.
Date	Main Tape No.	Time	Split Screen Tape No.	Time	Activities / Notes / Observations
1/30/2003	12	1045 -- 1104, 1106 -- 1110, 1254 --	7SS	1035 -- 1147, 1250 -- 1353	Drum IDRF741202484 bagged and taped. Drum lockring rotated by hand. Drum moved to SWB 0003. Upper slipsheet and wrapping removed from lower payload pack. Drum IDRF741205405 inspected, moved to SWB 0003. Drum IDRF741201615 inspected.
	12	-- 1430	8SS	1353 --	IDRF741201615 moved into SWB 0003. Drum IDRF074700411 inspected.
	13	1430 -- 1518, 1645 --	8SS	-- 1518, 1630 -- 1705	IDRF074700411 into SWB. Drum IDRF741201718 inspected and moved to SWB 0004. Drum IDRF741204650 inspected and moved to SWB 0004.
	13	-- 1804	9SS	1705 --	Drum IDRF074700394 inspected and moved to SWB 0006, Drum IDRF074221338 inspected.
	14	1804 -- 1810	9SS	--1815	Drum IDRF074221338 moved to SWB 0003.
1/31/2003	14	0815 -- 0919, 0958 -- 1051	10SS	0817 -- 0920, 1005 -- 1102	Examination of TID on bagged drum IDRF741202484. Visual examination of lower pack bottom slip plate. Inspection of dunnage drums. Begin removing rain water from dunnage drums.
	15	1053 -- 1121, 1252 -- 1331, 1343 -- 1436	11SS	1113 -- 1123, 1254 -- 1327, 1344 --	Replace damaged gasket sections on SWBs. Dunnage drums removed from SWB 0002, inspected for rain water, and returned to the SWB. SWB lids placed on boxes, begin installing bolts.
	16	1436 -- 1449, 1552 -- 1715	11SS	-- 1451	Torque wrench fails, obtain new torque wrench. All SWBs except 0003 closed, surveyed, and moved to warm shop for weekend storage.
2/3/2003	17	1304 -- 1507			Removal of drum IDRF074700484 from SBW IDRFXWB030003 and placement in IDRFXB030007. Installation of dunnage drums, and torqueing of the SBW lids. Removal of the SBWs from the TAN Hot Shop.
	18	1509 -- 1518			Removal of the SBW's from the TAN Hot Shop.

Table F-2. TRUPACT-II 157 Main Monitor Videotape Detailed Summary

Tape #	Description	Start Location on Tape (Elapsed Time) Hr	Min	Sec
1	TRUPACT assembly rolls into hot shop extension	0	00	05
1	Trupact assembly placed in work platform	0	14	41
1	Second half of work platform placed	0	31	20
1	Cover OCA Lid with plastic	0	45	00
1	Tape plastic to lid	0	48	00
1	Lifting fixture legs into OCV lid pockets	1	19	40
1	Lift OCA lid and survey	1	56	00
2	Move OCV Lid	0	07	25
2	Lifting fixture to ICV Lid	0	15	10
2	Check Lock ring	0	20	55
2	Sleeve around vessel	0	54	14
2	ACGLF to ICV (unsure about this shot)	1	21	30
2	Lift ICV lid	1	48	40
2	Survey and air sample interior of ICV	1	53	10
3	Remove ICV Lid	0	29	30
		0	33	30
		0	38	40
		0	42	25
3	Puppet CAM inspection of payload	1	17	01
		1	20	41
		1	27	58
4	Surveys of payload sides	0	05	30
4	Survey shots	0	38	00
4	Puppet CAM shots	0	42	40
4	Lifting fixture to payload, and lift payload out of ICV	1	27	00
4	Video exam of payload	1	43	40
5	Lift Payload into tent	0	03	25
5	Lift sleeve off payload	0	23	40
5	survey ICV interior	0	45	05
5	Remove sleeving from OCV/ICV cavities	1	29	10
6	Lowr ICV Lid onto cavity	0	03	30
6	Lift ICV out of OCV	0	20	50
6	Lower ICV into disposal box	0	28	30
6	Surveys of OCV cavity	0	41	10
6	OCV lid onto cavity	0	51	55

Table F-2. (continued).

Tape #	Description	Start Location on Tape (Elapsed Time) Hr	Min	Sec
7	Remove work platform half from OCV	0	21	00
7	Remove OCV from Hot Shop	0	43	00
7	Move SWB 02 into hot shop	1	14	30
7	Removing the lid from SWB 02	1	53	25
8	Installing gaskets on SWBs	0	38	45
8	Removal of payload top slip sheet	1	56	40
9	1st Drum Lift to inspection (IDRF004102263, pos. # 2)	0	01	15
9	Lid smears	0	10	10
9	Out of tent	0	35	00
9	Maslin swipe	0	42	18
9	into SWB	0	48	30
9	2nd Drum into inspection area (IDRF004002801, pos. #3)	0	50	00
9	Survey top	0	52	40
9	Tightness check	1	03	00
9	Maslin swipe	1	16	25
9	Into SWB	1	25	15
9	3rd Drum into inspection area (IDRF004101890, pos. #4)	1	30	20
9	Out of tent	1	50	00
9	Maslin swipe	1	54	10
9	Into SWB	1	57	43
9	4th Drum into inspection area (IDRF004102254, pos. #1)	1	59	40
9	Lid smears	2	01	30
10	Out of tent	0	13	15
10	Maslin swipe	0	17	00
10	Into SWB	0	19	30
11				
11	5th Drum into inspection area (IDRF004002790, pos. #5)	0	14	50
11	Lid smears	0	15	55
11	Maslin swipe	0	39	00
11	6th Drum into inspection area (IDRF741202088, pos. #7)	0	46	45
11	Lid smears	0	48	40
11	Out of tent	1	07	10
11	Maslin swipe	1	09	20
11	into SWB	1	13	30
11	7th Drum Lid Smears (IDRF741202484, pos. #6)	1	16	45
11	Drum IDRF741202484 2nd lid smears	1	28	30

Table F-2. (continued).

Tape #	Description	Start Location on Tape (Elapsed Time) Hr	Min	Sec
11	Application of fixative	1	54	10
11	Filter tightness check	1	58	37
12	Out of tent	0	01	55
12	Tape below lock ring	0	03	55
12	Lift drum to playpen	0	06	15
12	Maslin swipe	0	09	46
12	Move lock ring on drum	0	13	10
12	Move lock ring -- zoomed	0	14	05
12	Top pack lower slip sheet off	0	27	55
12	Lower pack upper slip sheet off	0	29	50
12	8th Drum to inspection area (IDRF741205405, pos. #8)	0	34	30
12	Check filter and lock ring	0	46	30
12	Out of tent	0	55	55
12	Lift to playpen	0	58	00
12	Maslin swipe	0	59	40
12	Into SWB	1	02	30
12	9th Drum into inspection area (IDRF741201615, pos. #9)	1	05	00
12	Lid smears	1	07	30
12	Bottom smears	1	12	38
12	Check filter and lock ring	1	18	15
12	Out of tent	1	27	10
12	Lift to playpen	1	29	40
12	Maslin swipe	1	31	20
12	Into SWB	1	35	35
12	10th Drum into inspection area (IDRF074700411, pos. #13)	1	38	50
12	Lid smears	1	40	35
12	Side smear	1	43	38
12	Bottom smears	1	45	40
12	Inspection of loose jamb nut	1	51	29
12	Check filter and lock ring	1	54	25
13	Out of tent	0	05	20
13	Lift to playpen	0	07	30
13	Maslin swipe	0	09	15
13	Into SWB	0	13	20
13	11th Drum into inspection area (IDRF741201718, pos. #10)	0	15	48
13	Lid smears	0	17	30
13	Check filter and lock ring	0	26	50

Table F-2. (continued).

Tape #	Description	Start Location on Tape (Elapsed Time) Hr	Min	Sec
13	Out of tent	0	36	11
13	Lift to playpen	0	37	30
13	Maslin swipe	0	39	50
13	Into SWB	0	43	00
13	12th Drum into inspection area (IDRF741204650, pos. #14)	0	46	20
13	Check filter and lock ring	0	50	00
13	Out of tent	0	54	20
13	Lift to playpen	0	57	20
13	Maslin swipe	0	59	35
13	Into SWB	1	02	20
13	13th Drum into inspection area (IDRF074700394, pos. #12)	1	04	13
13	Lid smears	1	06	10
13	Bottom smears	1	09	40
13	Check filter and lock ring	1	16	10
13	Out of tent	1	30	24
13	Lift to playpen	1	32	55
13	Maslin swipe	1	35	45
13	Into SWB	1	38	00
13	14th Drum into inspection area (IDRF074221338, pos. #11)	1	40	15
13	Lid smears	1	41	35
13	Bottom smears	1	45	50
13	Check filter and lock ring	1	49	45
13	Change vestibule	1	58	30
13	Out of tent	1	59	40
13	Lift to playpen	2	01	50
14	Maslin swipe	0	00	00
14	Into SWB	0	00	50
14	Check lock ring seal (t-cup) on contam drum	0	07	25
14	Dunnage drums into SWBs	0	44	15
15	Lid onto SWB IDRFXWB030001	1	22	30
15	Torqueing lid on SWB 01	1	48	05
16	Maslin swipe survey SWBs IDRFXWB030001,-2,-4,-5,-6	1	04	15
16	SWB IDRFXWB030006 out of shop	1	13	10
16	SWB IDRFXWB030004 out of shop	1	20	20
16	Shift SWB 3 out of the way	1	22	15
16	SWB IDRFXWB030001 out of shop	1	25	50
17	Bring SWB IDRFXWB030007 into shop	0	04	15

Table F-2. (continued).

Tape #	Description	Start Location on Tape (Elapsed Time) Hr	Min	Sec
17	Move contaminated drum from SWB 3 to SWB 7	0	40	50
17	Dunnage drums into SWBs	0	51	10
17	Lid onto SWB IDRFXWB030007	0	58	40
17	Bolts into SWB IDRFXWB030007	1	02	50
17	Torqueing lid on SWB IDRFXWB030007	1	17	00
17	Maslin swipe SWBs	1	59	00
18	SWB IDRFXWB03000 out of shop	0	00	30

Appendix G

Resumes of Investigators

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Barry H. O'Brien

Summary

Nineteen years of experience with chemical process development, pilot plant design and operation, and support of plant operations for high-level radioactive waste processes. Primary areas of expertise are fluidized-bed technology, solids processing, waste treatment, process control systems, modeling of aqueous nitrate/nitric acid processes, and hazardous waste management. Nine years of experience as a supervisor and technical lead. Registered Professional Engineer in Chemical Engineering.

Experience

2000–Present Bechtel BWXT Idaho (BBWI) Idaho Falls, ID

Advisory Engineer, ChE Systems Design

- Supported feasibility studies for treatment of non-HLW tank farm wastes and disposal as remote-handled TRU waste.
- Researched gasification and fuel cell technologies for next generation Coal Power Plants for Bechtel Power
- Was process engineer for design of a steam reformer demonstration unit to convert fossil fuel to hydrogen for use in fuel cells. Became the team expert on chemistry of the process and served as liason for process issues for other disciplines. Modeled portions of the process using ASPEN, OLI, and HSC Chemistry.
- Prepared a feasibility study comparing methods of denitrating and grouting radioactive waste for disposal.
- Modeled feed blends and prepared process flowsheets for High Level Waste Evaporator operation in summer of 2001.
- Provide technical review of documents generated by the ChE Systems Design and by others. Verified calculations of TMI fuel drying and Irradiated Fuel Storage Facility fuel cooling requirements

1999-2000 Bechtel BWXT Idaho (BBWI) Idaho Falls, ID

Technical Lead, INTEC RCRA Liquid Sampling

- Sampled waste processes at INTEC to support RCRA permitting of waste treatment processes.
- Prepared sampling plans, coordinated sampling with Operations and the Analytical Laboratories, and interpreted data.
- Managed a sampling budget of $1.2M.

Technical Lead, Process Support

- Led a team to identify and resolve off-gas plugging which caused shutdown of the New Waste Calciner Facility in May 1999.
- Provided direct process support and pilot plant testing for existing INTEC waste systems – High Level Waste Tank Farm, New Waste Calcining Facility, High Level Liquid Waste Evaporator, and Calcined Solids Storage Facilities.

1994-1999 Lockheed Martin Idaho Technologies Co Idaho Falls, ID

Technical Lead, Process Support

- Provided direct process support and pilot plant testing for existing INTEC waste systems – High Level Waste Tank Farm, New Waste Calcining Facility, High Level Liquid Waste Evaporator, and Calcined Solids Storage Facilities.
- Maintained pilot plant equipment, procedures and training,.
- Managed a permitted hazardous waste storage facility for pilot plant wastes.
- Directed integrated process modeling for INTEC waste processes, including the Process Evaporative Waste Evaporator and Liquid Effluent Treatment and Disposal Facility.
- Managed and tracked budget accounts of $440K and $180K.
- Provided feed flowsheets to Operations for the New Waste Calcining Facility and High-level Liquid Waste Evaporator at INTEC.

1990-1994 Westinghouse Idaho Nuclear Co., Inc. Idaho Falls, ID

Subsection Manager, Pilot Plant Support and Development

- Supervised a group of six engineers and scientists which provided process development for existing and new plant processes for high-level radioactive waste through process modeling, laboratory tests, mock-ups, and pilot-plant testing.
- Prepared schedules and budgets for the subsection with an annual budget of $800K.
- Prepared feed flowsheets and provided trouble-shooting support for the New Waste Calcining Facility, a fluidized-bed process for converting liquid waste to granular solid.

1983-1990 Westinghouse Idaho Nuclear Co., Inc. Idaho Falls, ID

Engineer III and Senior Engineer I, High-Level Waste Process Development

- Performed laboratory tests and modeling for various high-level waste processes such as the New Waste Calcining Facility, HEPA filter leach, and tank farm.
- Supervised construction and startup of the Enclosed 15-cm Diameter Calciner Pilot Plant.
- Specified, purchased, installed, and configured the distributed control system for the calciner pilot plants.
- Developed Expert Systems from process data for a fluidized-bed uranyl nitrate denitrator and radioactive waste calciner.

Education

1978–1982 University of Idaho Moscow, ID

B.S., Chemical Engineering. Graduated Cum Laude.

1982–1983 University of Idaho Moscow, ID

- M.S., Chemical Engineering.
- Masters Thesis - "A Gradientless Spinning-Film Reactor for Gas-Liquid and Gas-Liquid-Solid Reaction Studies."

Publications/ Presentations

2000 Summary of Waste Calcination at the Idaho Nuclear Technology and Engineering Center, INEEL/EXT-2000-01206. Co-author with B. J. Newby.

2000 NWCF Off-gas Line Restriction Identification and Resolution, INEEL/EXT-2000-00322. Co-author with J. A. Nenni, R. E. Schindler, and R. A. Wood.

2000 NWCF Calciner Emissions Inventory – Final Report for Test Series 1, 2, and 3, INEEL/EXT-2000-00114, with L. J. Young et. al.

1995 Estimation of Alkali Metal Mole Percent and Weight of Calcined Solids for ICPP Calcine, INEL-95/0184.

1993 Calcination Of Fluorinel-Sodium Waste Blends Using Sugar as a Feed , WINCO-1130, Westinghouse Idaho Nuclear Company, co-author with B. J. Newby and T. D. Thomson.

1991 "Inductive Classification of Pilot Plant Data from a Fluidized Bed Calciner," presented at ANS Topical Meeting. "AI91 Frontiers: Innovative Computing for the Nuclear Industry,' September 1991, Jackson, Wyoming.

1990 "Inductive Classification of Pilot Plant Data from a Fluidized Bed Calciner," presented at the Westinghouse Artificial Intelligence/Neural Network Conference, June 1990, Baltimore, Maryland.

1986 "A Gradientless Spinning Film Reactor for Gas-Liquid and Gas-Liquid-Solid Reaction Studies," presented at the AIChE National Conference, November, 1986, Miami, Florida.

Professional Societies

- AIChE – Local section webmaster. Have served as treasurer, secretary, vice-chairman, chairman, and director for the local section.
- ISA – Local Section webmaster and Senior Member.

Licenses

Registered Professional Engineer in Chemical Engineering in Idaho since 1987.

Jeffrey M. Lacy

Work: 526-2788

EDUCATION

Registered Professional Engineer, State of Idaho, since 1995
M.S., Engineering Mechanics, Montana State University, 1989
B.S., Civil Engineering, with Honors, Montana State University, 1987

PROFESSIONAL ENGINEERING EXPERIENCE–15 YEARS

2002 – Present. Advisory Engineer, Building Technologies and Energy Management, BBWI/INEEL
1999 - 2002. Principal Research Engineer, Aerospace Systems Engineering, BWX Technologies.
1989 - 1999. Staff Engineer, Applied Mechanics, BBWI/INEEL
1987 - 1989. Engineering Research Assistant, Engineering Mechanics, Montana State University.

BUILDING TECHNOLOGIES AND ENERGY MANAGEMENT,
BBWI/INEEL, 2002–PRESENT

Principal Investigator on projects involving theoretical and experimental wind flow, energy flow, shock and vibration, strength of materials and structural systems.

AEROSPACE ENGINEERING, BWX TECHNOLOGIES, 1999–2002

Engineering Research

Principal researcher for the engine development of the Solar Orbit Transfer Vehicle Space Experiment. I planned and implemented complex physical experiments, wrote the data acquisition and system control software; designed, evaluated and installed test hardware; reduced and analyzed the data, and wrote test plans and reports [1,2].

Automated Systems and Motion Control

Designed, implemented, and programmed multi-axis automated motion systems for phased array ultrasonic and laser profilometric inspection of manufactured parts, including rectilinear and elliptical/helical automated incrementing scans. Involved physical integration of disparate controllers, amplifiers, motors, and rotary and linear encoders.

APPLIED MECHANICS, BBWI / INEEL, 1989 – 1999

Performed a variety of design, analysis, and research functions related to nuclear reactor safety, nuclear aerospace systems, hurricane wind evaluation, wind tunnel design, and structural response to wind and earthquake. Projects over this period included

Aerospace systems

Topaz-II Joint U.S./Russian Space Program, Lead Structural Engineer, Flight Safety Team Kirtland Air Force Base, New Mexico 1993.
USAF/DOE Bimodal Program Design Team, 1993-1994
SPRE/ISUS Solar Bimodal Engine, 1994.
COMET Nuclear Rocket, 1992.

Wind and Buildings Research

Hurricane Interception and Measurement, Principal Investigator, 1998 – 1999
Pilot Windstorm Center, Design Manager, 1998-1999
Windstorm Simulation Center, Design Lead, 1997
Manufactured home static and dynamic structural tests, 1998 – 1999

Nuclear Reactor Safety

Advanced Test Reactor fuel buckling predictions, 1990-1992

PUBLICATIONS

1. Lacy, J. M., Carmack, W. J., et al, "Creep Response of Rhenium to High-Temperature Cyclic Loads," Proceedings of the National Space and Missile Materials Symposium, June 24-28, 2001, Monterey, CA.
2. Carmack, W. J., Lacy, J. M., et al, "High-Temperature Thermal Conductivity of Graphite Felt Insulation," Proceedings of the National Space and Missile Materials Symposium, June 24-28, 2001, Monterey, CA.
3. Richins, W. D., Lacy, J. M., et al, "Full-Scale Structural Testing of a Single-Wide Manufactured Home," Proceedings of the World Conference on Timber Engineering, July 31 - Aug. 3, 2000, Whistler, BC.
4. Lacy, J. M., Larson, T.K., and Richins, W. D., "Defining Hurricane Winds – Engineers Capture Georges," Structure Magazine, Summer 1999 edition, June, 1999.
5. Lacy, J. M. et al, Operational Requirements and Concept for a Full-Scale Structural Wind Test Facility, INEEL/INT-99-00838, August, 1999.
6. Oh, C.H., and Lacy, J.M., "Numerical Calculations of Wind Flow in a Full-Scale Wind Test Facility," Proceedings of the 10th International Conference on Wind Engineering, Copenhagen,Denmark, June, 1999.
7. Richins, W. D., et al, Full-Scale Structural Testing of a Single-Wide Manufactured Home, Oakwood Model 1320; 14 ft. x 62 ft., INEEL-EX-1999-301, March, 1999.
8. Lacy, J.M., and Earl, J.S., Main Drive Selection for the Windstorm Simulation Center, INEEL/EXT-98-00089, February, 1998.
9. Lacy, J. M., O'Brien, C. C., "Design Considerations for a Full-Scale Windstorm Test Facility," Eighth U.S. National Conference on Wind Engineering, Baltimore, MD, June, 1997
10. Idaho National Engineering and Environmental Laboratory, Partnership for Natural Disaster Reduction, Test Complex Phase 1 Conceptual Design Report, INEEL-EXT-97-00436, May,1997
11. Lacy, J. M., Earthquake Engineering Needs and Solutions, Proceedings of the INEL Seismic Testing Workshop, INEL-95/0587, December, 1995.
12. Schaefer, E. D., and Lacy, J.M., "Structural Evaluation of Topaz-II, The Russian Space-Based Nuclear Reactor," IES 19th Space Simulation Conference, Baltimore MD, October, 1996.
13. Lacy, J. M., and Miller, G. K., "Modeling Considerations for Large Deformation Impact Problems," ASME 4th International Conference on Nuclear Engineering, pp 497-501, 1996.
14. Reynolds, E., Schaefer, E.D., Polansky, G. , Lacy, J.M., Bocharov, A., "Utilizing a Russian Space Nuclear Reactor for a United States Space Mission: Systems Integration Issues," Proceedings, 11th Symposium on Space Nuclear Power and Propulsion, Albuquerque, NM, January, 1994.

KIP E. ARCHIBALD

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Idaho Falls, Idaho 83402
Home: 529-8865
Work: 526-3187

EDUCATION

B. S. Mechanical Engineering, University of Idaho, 1989.

EXPERIENCE

1999 – present **PRINCIPAL ENGINEER ,** BBWI

Project Team member for the Cold Crucible Induction Melter.

Primary responsibilities include researching and testing of various decontamination and waste minimization techniques.

Responsible for planning and conducting evaluations of new waste minimization technologies including procuring equipment, directing tests, and evaluating results.

Responsible for deploying new decontamination techniques at INTEC, training operators on new techniques, writing and aiding in completing SO tests and operating procedures.

Project Team Member (FY2000) for testing and deployment of NPOx decontamination process.

Project Team Member for Debris Treatment at the NWCF Facility.

Principal Investigator (FY2001) responsible for making NPOx decontamination process mobile and ready for deployment.

Project Team Member for evaluating for a Plasma Etching process that is being developed at UCLA. This process is being developed to aid in the decontamination of material. Responsibilities were to provide test coupons and to compare this technique to other decontamination techniques.

1995 – 1999 **PRINCIPAL ENGINEER ,** LMITCO

Primary responsibilities include researching and testing of various decontamination and waste minimization techniques.

Responsible for planning and conducting evaluations of new waste minimization technologies including procuring equipment, directing tests, and evaluating results.

Responsible for implementing new techniques in the plant, training operators on new techniques, writing and aiding in completing SO tests and operating procedures.

Project Team Member for installation and testing of NWCF liquid abrasive system.

Project Team Member for creating waste generator procedure.

1992 – 1995 **SENIOR ENGINEER**, WINCO

Primary responsibilities include researching and testing of various decontamination methods. Extensive involvement with:

- **CO_2 Pellet Blasting** – Designed a test plan and conducted a 13-week test of the CO_2 pellet blasting method.

- **Vacuum Systems** – Conducted research of all the DOE sites to determine the criteria for selecting the vacuum system to be used in ICPP decontamination activities.

- **Concrete Decontamination** – Designed a test plan and conducted testing of three concrete decontamination methods. Brought three vendors onsite to demonstrate proven, new, and experimental methods.

Involved with NEPA, RCRA, Safety, and waste disposal issues while conducting demonstrations.

Involved with supporting the upgrade of the NWCF decontamination facility for debris treatment.

Technical support for the Decontamination and Decommissioning group.

1991 – 1992 **ENGINEER**, WINCO

Reviewed and dispositioned Nonconformance Reports (NCRs), Construction Interface Documents (CIDs), drawings, and vendor data for the following FPR Projects: 1) siding, 2) roofing, 3) piping, 4) slab tanks, and 5) steel cylindrical vessels.

Developed and performed SO testing.

1990 – 1991 **ENGINEER**, WINCO

Prepared and revised operating procedures, manuals, data sheets, and other documents for the liquid effluent treatment and disposal (LET&D) system and the PWL drain system in support of the New Waste Calcining Facility (NWCF) startup. This involved research and development of all technical aspects; as both systems were new and no previous procedures existed.

PUBLICATIONS

"CO_2 Pellet Blasting Literature Search and Decontamination Scoping Tests Report," December 1993.

"ICPP Decontamination Development Program," April 1994.

"Waste Minimization and Decontamination Development at the ICPP," August 1994.

"A Review of Decontamination Technologies under Development and Demonstration at the ICPP," November 1994.

"Concrete Decontamination Scoping Tests," January 1995.

"Development of Waste Minimization and Decontamination Technologies at the Idaho Chemical Processing Plant," May 1995.

"Liquid Abrasive Pressure Pot Scoping Tests Report," January 1996.

"CO_2 Pellet Blasting Studies," January 1997.

"Cleaning and Decontamination Using Strippable and Protective Coatings at the Idaho National Engineering and Environmental Laboratory," March 1999.

"NWCF Facility Waste Streams," August 1999.

"Tests Conducted with Strippable Coatings," August 1999.

"Nitric Acid/Potassium Permanganate/Oxalic Acid (NPOx) System Modifications," September 2001.

PROFESSIONAL ORGANIZATIONS/QUALIFICATIONS

Member of the American Society of Mechanical Engineers (ASME) since 1988.

Trained Radiation and Respirator Worker.

Received a National Award for Pollution Prevention (June 2001)

REFERENCES

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